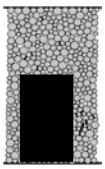
Total Stress Triaxial Compression

Unconsolidated Undrained (Single Stage)

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth	4.00-4.45		
	Description	Greyish brown silty CLAY		
	Type	U		
	Initial Sample Length	L_0	(mm)	141.0
	Initial Sample Diameter	D_0	(mm)	69.0
	Initial Sample Weight	W_0	(gr)	1103.0
	Bulk Density	ρ_0	(Mg/m3)	2.09
	Particle Density	ρ_s	(Mg/m3)	2.65

Initial Conditions

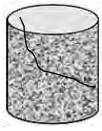
Initial Cell Pressure	σ_3	(kPa)	80
Strain Rate	m_S	(mm/min)	2.81980
MembraneThickness	m_b	(mm)	0.31
Displacement Input	L_{IP}	(mm)	CH 2
Load Input	N_{IP}	(N)	CH 1
Initial Moisture	$\omega_i\%$	(%)	21
Initial Dry Density	ρ_{d0}	(Mg/m3)	1.73
Initial Voids Ratio	e_0	.	0.53
Initial Degree of Saturation	S_o	(%)	100

Final Conditions

Max Deviator Stress	$(\sigma_1-\sigma_3)_f$	(kPa)	331
MembraneCorrection	m_C	(kPa)	1.697
Strain At Max Stress	$\varepsilon_f\%$	(%)	10.48
Shear Strength	c_U	(kPa)	166
Final Moisture	$\omega_f\%$	(%)	21
Final Dry Density	ρ_{df}	(Mg/m3)	1.73
Final Voids Ratio	e_f	.	0.53
Final Degree of Saturation	S_f	(%)	100.0

Notes

Re-issue 1 - Format of Point Load Strength Index results changed as per client request



Failure Sketch

(surface inclination)

Test Method	BS1377-7 : 1900 Clause 8			Test Name	591096
Database: .\SQLEXPRESS \ 6171-I2 Analytical				Test Date	04/07/2016
Site Reference	Kraft Phase 2			Borehole	BH04
Jobfile	16-20746			Sample	591096
Client	Hydrock Consultants			Depth	4.00-4.45
Operator	bielatowiczs	Checked	pytlikm	Approved	pytlikm

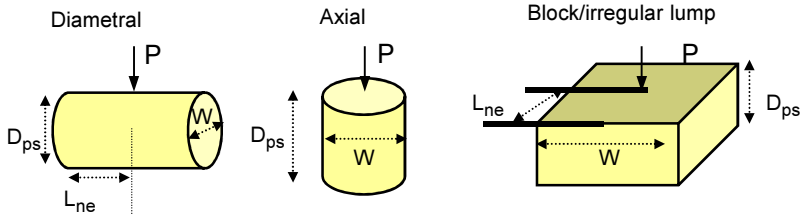
i2 Analytical Limited, 7 Woodshots Meadow, Croxley Green Business Park, Herts WD18 8YS
i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Point Load Strength Index Tests
Summary of Results

Project No.	Project Name
16-20746	Kraft Phase 2

Borehole No.	Sample			Specimen		Rock Type and Test condition	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter, De	Point Load Strength Index		Remarks (including water content if measured)
	Depth	Ref.	Type	Ref.	Depth		Type (D, A, I, B)	Direction (L, P or U)		Lne	W	Dps	Dps'			Is	Is(50)	
	m				m					mm	mm	mm	mm	kN	mm	MPa	MPa	
BH01	7.8-8.1	B	B	1		Greyish brown silty CLAY	D	U	YES	55.0	86.0	86.0	68.0	0.2	76.5	0.03	0.04	591073
BH01	11.7-12.0	C	B	1		Greyish brown silty CLAY	D	U	YES	85.0	89.0	89.0	81.0	9.1	84.9	1.26	1.60	591074; stiff sample
BH01	12.9-13.3	C	U	1		Greyish brown silty CLAY	D	U	YES	150.0	86.0	86.0	70.0	0.6	77.6	0.10	0.12	591075
BH01	15.5-15.8	C	U	1		Greyish brown silty CLAY	D	U	YES	85.0	87.0	87.0	70.0	0.5	78.0	0.08	0.10	591076
BH01	17.3-17.8	C	U	1		Greyish brown silty CLAY	D	U	YES	80.0	90.0	90.0	72.0	0.7	80.5	0.11	0.13	591077
BH02	8.0-8.4	C	U	1		Greyish brown silty CLAY	D	U	YES	50.0	90.0	90.0	75.0	0.3	82.2	0.04	0.06	591082
BH02	13.5-13.7	C	U	1		Greyish brown silty CLAY	D	U	YES	70.0	87.0	87.0	74.0	0.4	80.2	0.06	0.08	591083
BH02	17.0-17.3	C	U	1		Greyish brown silty CLAY	D	U	YES	105.0	92.0	92.0	59.0	0.7	73.7	0.13	0.15	591084
BH03	9.0-9.5	C	U	1		Greyish brown gravelly silty CLAY	D	U	YES	50.0	80.0	80.0	52.0	0.1	64.5	0.02	0.03	591090
BH03	13.9-14.2	C	U	1		Greyish brown silty CLAY	D	U	YES	110.0	86.0	86.0	75.0	0.6	80.3	0.09	0.12	591091

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction
L - parallel to planes of weakness
P - perpendicular to planes of weakness
U - unknown or random
Dimensions
Dps - Distance between platens (platen separation)
Dps' - at failure (see ISRM note 6)
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Test performed in accordance with ISRM Suggested Methods : 2007, unless noted otherwise
Detailed legend for test and dimensions, based on ISRM, is shown above.
Size factor, F = (De/50)0.45 for all tests.

Comments: Re-issue 1 - Format of Point Load Strength Index results changed as per client request

Approved: Mirosława Pytlik
PL Head of Geotechnical section

Signed: Terry Stafford
Geotechnical Manager

Date Reported: 12/07/2016

for and on behalf of i2 Analytical Ltd

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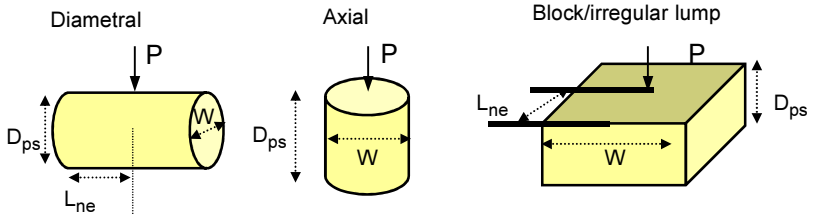
The results included within the report are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

Point Load Strength Index Tests
Summary of Results

Project No.	Project Name
16-20746	Kraft Phase 2

Borehole No.	Sample			Specimen		Rock Type and Test condition	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P	Equivalent diameter, De	Point Load Strength Index		Remarks (including water content if measured)
	Depth	Ref.	Type	Ref.	Depth		Type (D, A, I, B)	Direction (L, P or U)		Lne	W	Dps	Dps'			Is	Is(50)	
	m				m					mm	mm	mm	mm	kN	mm	MPa	MPa	
BH03	17.2-17.5	C	U	1		Greyish brown silty CLAY	D	U	YES	80.0	86.0	86.0	69.0	0.6	77.0	0.10	0.12	591092
BH04	6.0-6.3	C	U	1		Greyish brown CLAY	D	U	YES	120.0	87.0	87.0	59.0	0.4	71.6	0.08	0.09	591097
BH04	9.0-9.4	C	U	1		Greyish brown CLAY	D	U	YES	90.0	87.0	87.0	63.0	0.3	74.0	0.05	0.07	591098
BH04	12.0-12.4	C	U	1		Greyish brown silty CLAY	D	U	YES	110.0	88.0	88.0	64.0	0.3	75.0	0.05	0.06	591099
BH04	14.0-14.3	C	U	1		Greyish brown silty CLAY	D	U	YES	80.0	88.0	88.0	63.0	0.6	74.5	0.11	0.13	591100

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction
L - parallel to planes of weakness
P - perpendicular to planes of weakness
U - unknown or random
Dimensions
Dps - Distance between platens (platen separation)
Dps' - at failure (see ISRM note 6)
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Test performed in accordance with ISRM Suggested Methods : 2007, unless noted otherwise
Detailed legend for test and dimensions, based on ISRM, is shown above.
Size factor, F = (De/50)0.45 for all tests.

Comments: Re-issue 1 - Format of Point Load Strength Index results changed as per client request

Approved: Mirosława Pytlik
PL Head of Geotechnical section

Signed: Terry Stafford
Geotechnical Manager

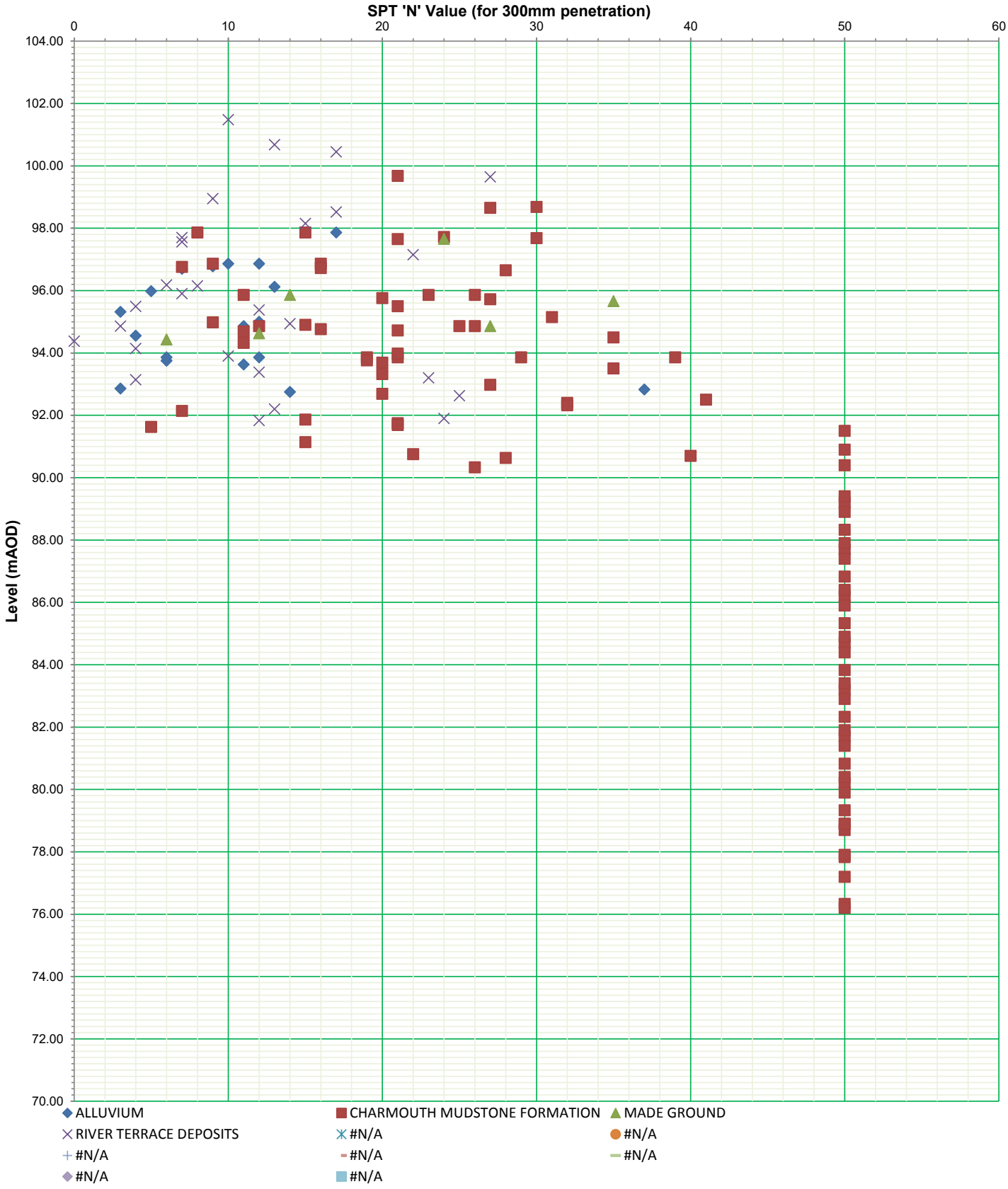
Date Reported: 12/07/2016

for and on behalf of i2 Analytical Ltd

Hydrock

SPT 'N' VALUES vs LEVEL

Site:	Client:	Contract No.	C161279
Kraft Phase 2	db symmetry	All Data	

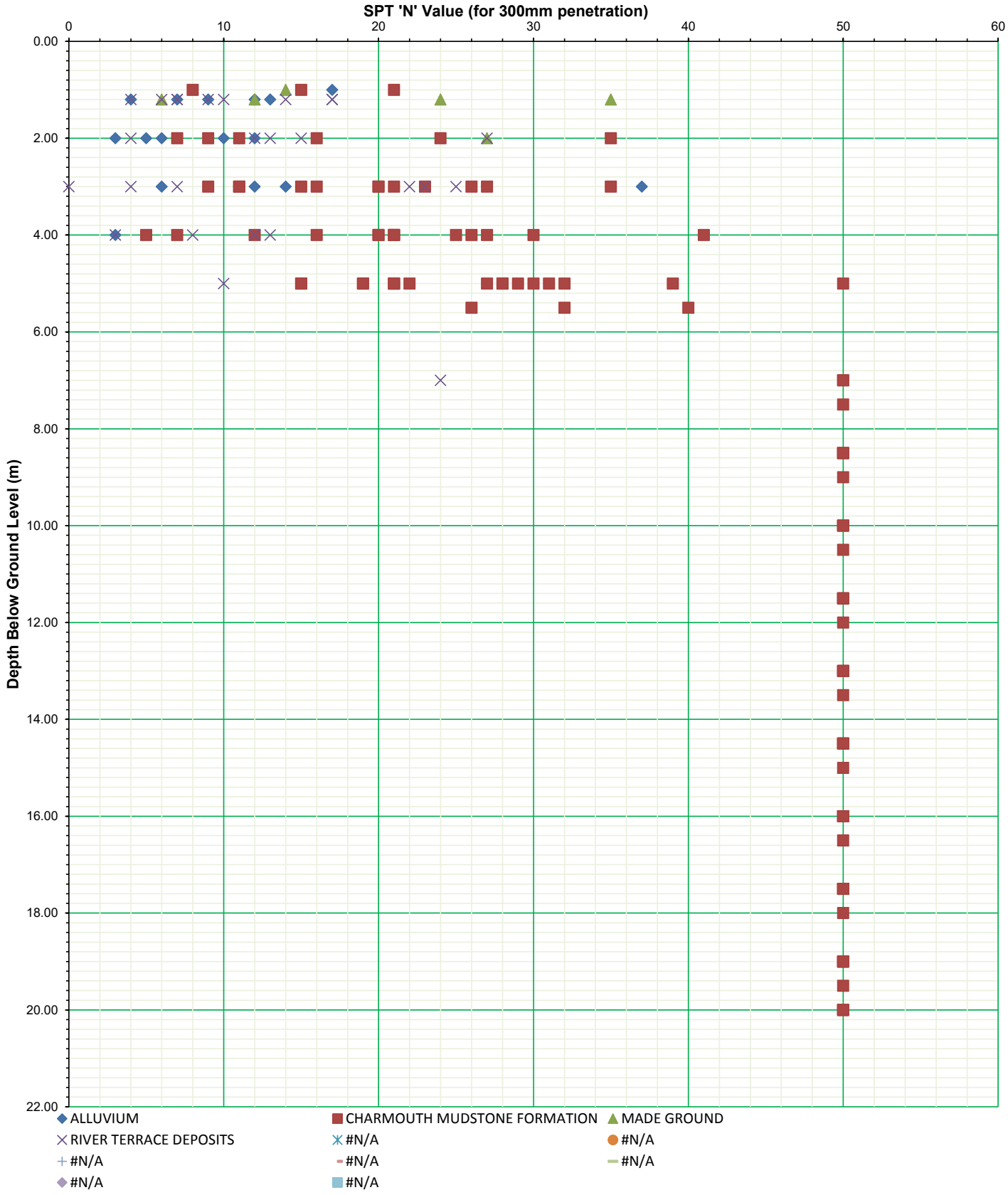


Version	0.1	Date	16/07/2015

Hydrock

SPT 'N' VALUES vs DEPTH

Site:	Client:	Contract No.	C161279
Kraft Phase 2	db symmetry	All Data	

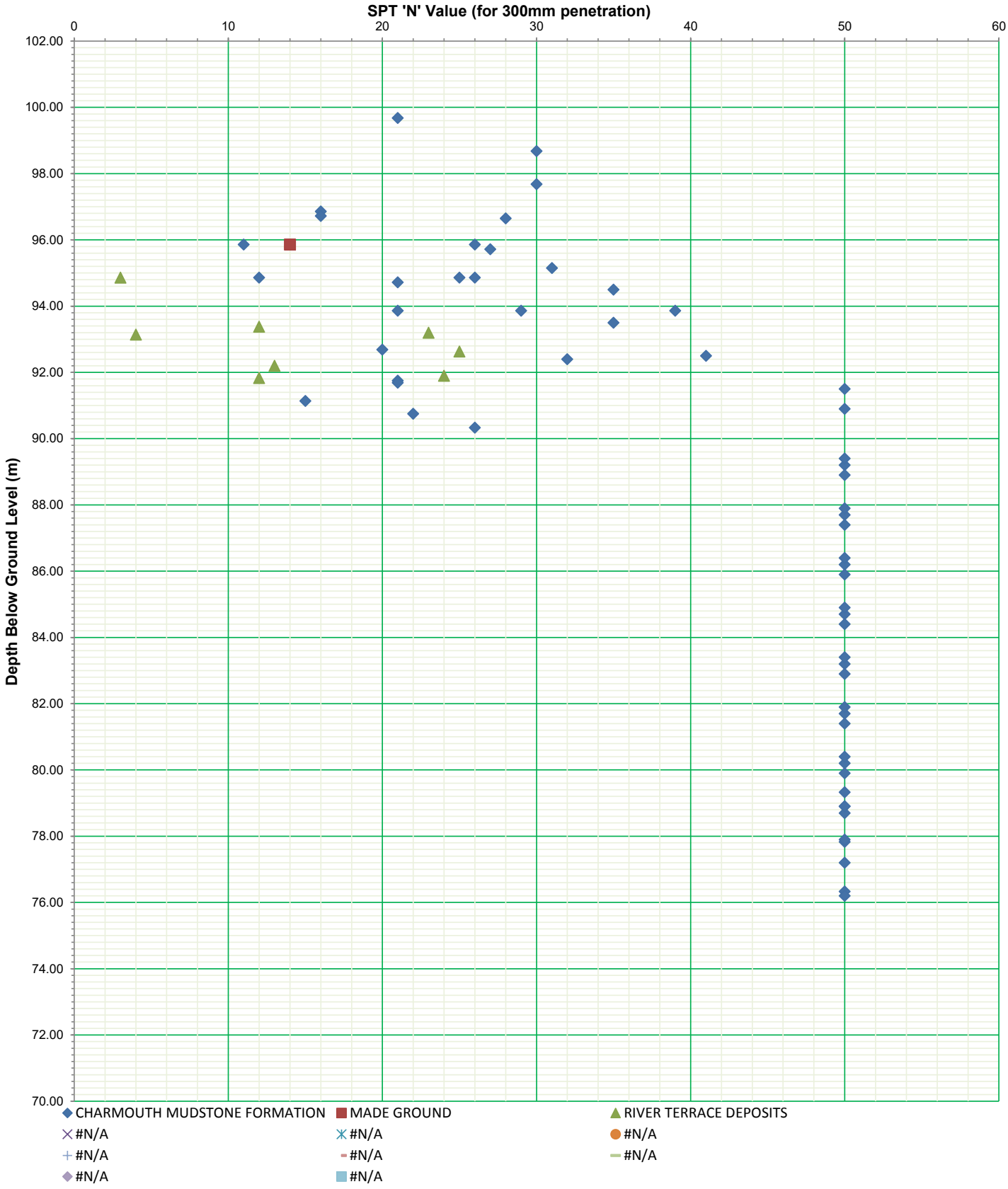


Version	0.1	Date	16/07/2015

Hydrock

SPT 'N' VALUES vs LEVEL GRANULAR STRATA

Site:	Client:	Contract No.	C161279
Kraft Phase 2	db symmetry	All Data	

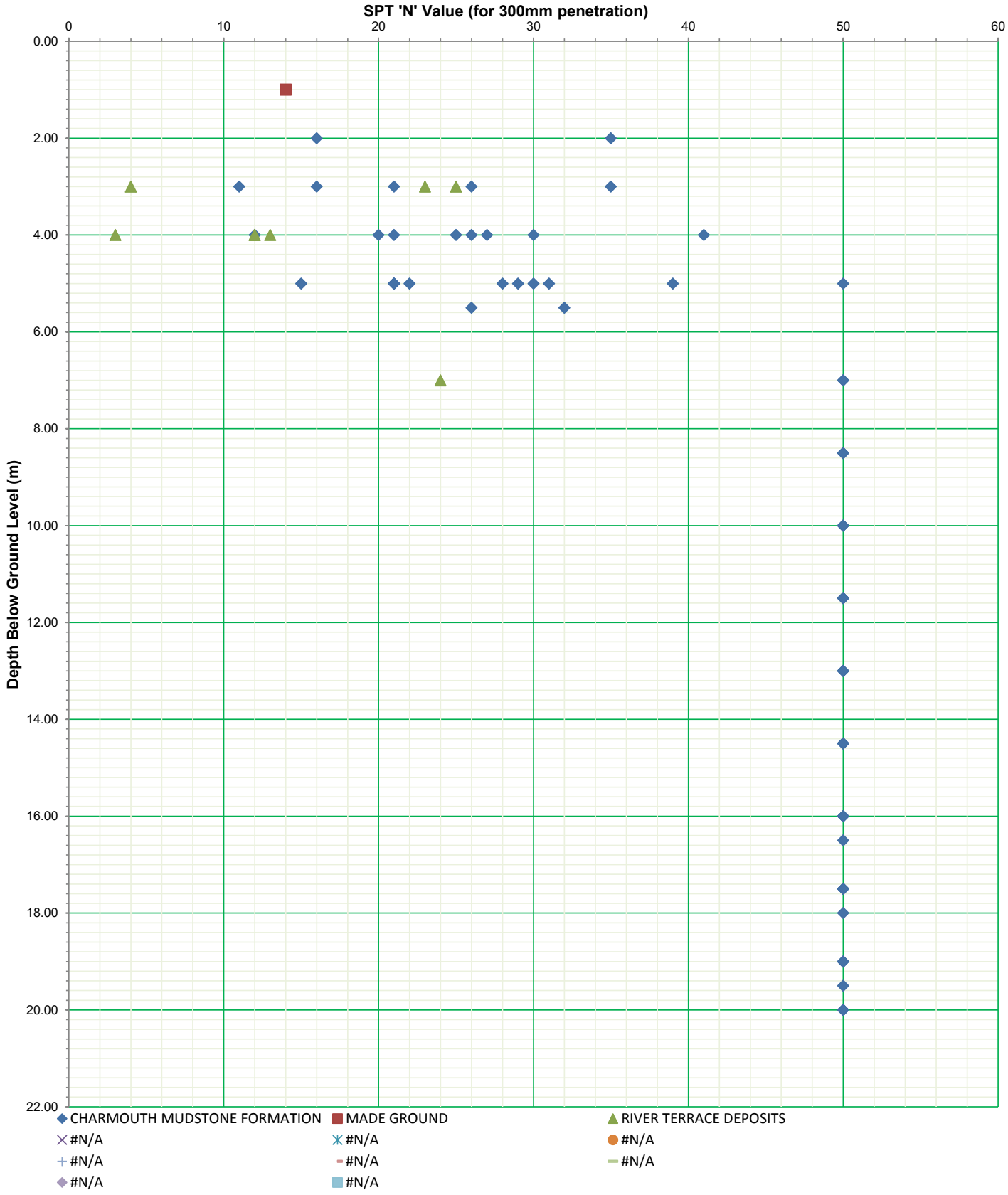


Version	0.1	Date	16/07/2015

Hydrock

SPT 'N' VALUES vs DEPTH GRANULAR STRATA

Site:	Client:	Contract No.	C161279
Kraft Phase 2	db symmetry	All Data	

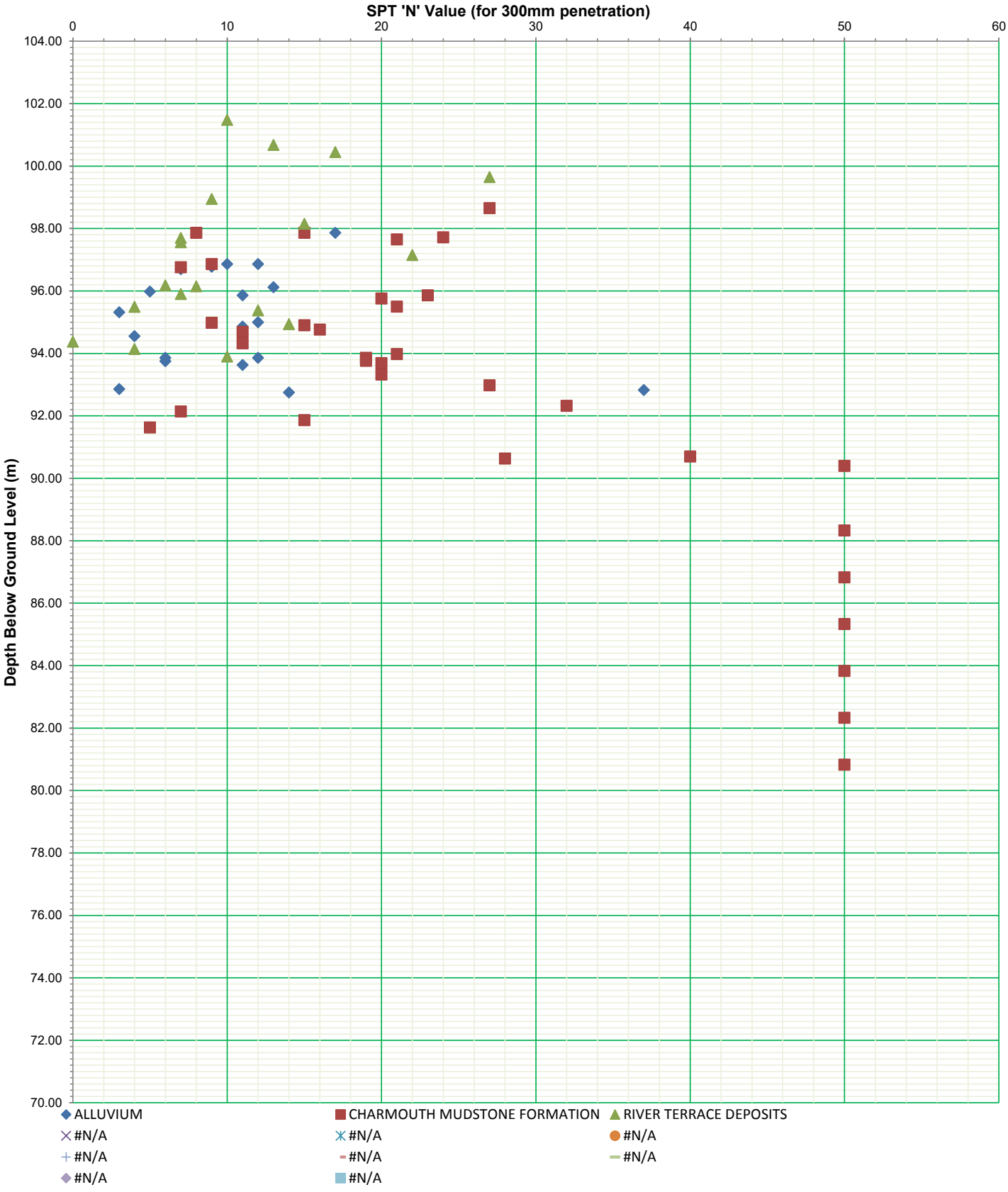


Version	0.1	Date	16/07/2015

Hydrock

SPT 'N' VALUES vs LEVEL COHESIVE STRATA

Site:	Client:	Contract No.	C161279
Kraft Phase 2	db symmetry	All Data	

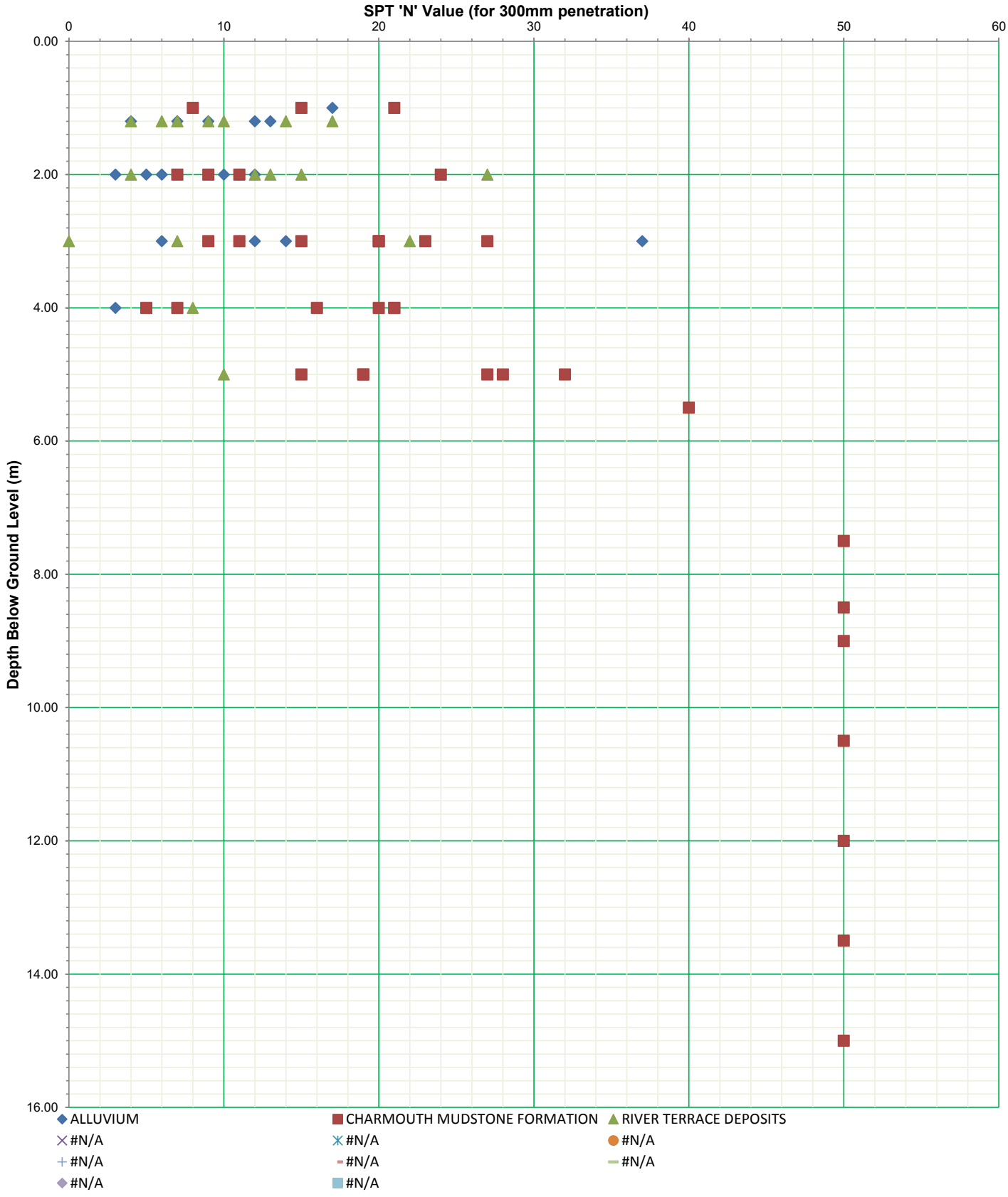


Version	0.1	Date	16/07/2015

Hydrock

SPT 'N' VALUES vs DEPTH COHESIVE STRATA

Site:	Client:	Contract No.	C161279
Kraft Phase 2	db symmetry	All Data	



Version	0.1	Date	16/07/2015

Hydrock

Client	Location or material to which this assessment applies
Db Symmetry	River Terrace Deposits
Project	
Kraft Phase 2	
Job number	
C161279	

Concrete in aggressive ground

After BRE Special Digest 1, 2005

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	4	0	0
No. tests in 20% data set	1		
No. tests with suspected pyrite		0	
Maximum value	28.9		
Mean of highest two values	23		
Mean of highest 20%			
Characteristic Value	**28.9**		

	[no pyrite]	[pyrite suspected]
DS Class	**DS-1**	

If pyrite suspected, DS Class limited to

Is pyrite assumed to be present? No **Adopted DS Class =** **DS-1**

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	0	0

DS Class

pH data

	Soil	Water
Number of tests	4	0
No. tests in 20% data set	1	
Lowest pH	7.4	
Mean of lowest 20%	7.4	
Characteristic value	**7.4**	
Design value	**7.4**	

Number of soil pH results less than 5.5: 0

DS Class design value

Based on higher of soil and water data **DS-1**

ACEC Class design value

Natural ground

Mobile groundwater **AC-1 ***

* increase to AC-2z in flowing water (pure or with >15mg/l carbon dioxide)

Hydrock

Client	Location or material to which this assessment applies
Db symmetry ltd	Made Ground
Project	
Kraft Phase 2	
Job number	
C161279	

Concrete in aggressive ground

After BRE Special Digest 1, 2005

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	1	0	0
No. tests in 20% data set	0		
No. tests with suspected pyrite		0	
Maximum value	42.4		
Mean of highest two values	42		
Mean of highest 20%			
Characteristic Value	**42.4**		
			Mg not required
	[no pyrite]	**[pyrite suspected]**	
DS Class	**DS-1**		

If pyrite suspected, DS Class limited to

Is pyrite assumed to be present? No **Adopted DS Class =** **DS-1**

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	0	0 **Mg not required**
DS Class		

pH data

	Soil	Water
Number of tests	1	0
No. tests in 20% data set	0	
Lowest pH	7.4	
Mean of lowest 20%		
Characteristic value	**7.4**	
Design value	**7.4**	

Number of soil pH results less than 5.5: 0

DS Class design value

Based on higher of soil and water data **DS-1**

ACEC Class design value

Brownfield

Mobile groundwater **AC-1**

Hydrock

Client	Location or material to which this assessment applies
Db Symmetry	Charmouth Mudstone Formation
Project	
Kraft Phase 2	
Job number	
C161279	

Concrete in aggressive ground

After BRE Special Digest 1, 2005

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	4	4	0
No. tests in 20% data set	1	1	
No. tests with suspected pyrite		2	
Maximum value	394	0.5	
Mean of highest two values	337	1	
Mean of highest 20%			
Characteristic Value	**394**	**0.5**	
	[no pyrite]	**[pyrite suspected]**	
DS Class	**DS-1**	**DS-2**	

If pyrite suspected, DS Class limited to **DS-2**

Is pyrite assumed to be present? Yes **Adopted DS Class =** **DS-2**

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	100	0
DS Class	**DS-1**	

pH data

	Soil	Water
Number of tests	4	5
No. tests in 20% data set	1	1
Lowest pH	4.9	7.4
Mean of lowest 20%	4.9	7.4
Characteristic value	**4.9**	**7.4**
Design value	**4.9**	

Number of soil pH results less than 5.5: 1

DS Class design value

Based on higher of soil and water data **DS-2**

ACEC Class design value

Natural ground

Mobile groundwater **AC-3z**

Hydrock

Client	Location or material to which this assessment applies
Db Symmetry	Alluvium
Project	
Kraft Phase 2	
Job number	
C161279	

Concrete in aggressive ground

After BRE Special Digest 1, 2005

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	3	0	0
No. tests in 20% data set	1		
No. tests with suspected pyrite		0	
Maximum value	50.9		
Mean of highest two values	37		
Mean of highest 20%			
Characteristic Value	**50.9**		

	[no pyrite]	[pyrite suspected]
DS Class	**DS-1**	

If pyrite suspected, DS Class limited to

Is pyrite assumed to be present? No **Adopted DS Class =** **DS-1**

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	0	0

DS Class

pH data

	Soil	Water
Number of tests	3	0
No. tests in 20% data set	1	
Lowest pH	6.8	
Mean of lowest 20%	6.8	
Characteristic value	**6.8**	
Design value	**6.8**	

Number of soil pH results less than 5.5: 0

DS Class design value

Based on higher of soil and water data **DS-1**

ACEC Class design value

Natural ground

Mobile groundwater **AC-1 ***

* increase to AC-2z in flowing water (pure or with >15mg/l carbon dioxide)

Appendix D

Site Monitoring Data

Hydrock

Site: Kraft, Banbury
Job number: C 161279
Client: DB Symmetry

Gas analyser: GFM435 No. 11874
Equipment check OK: Y
Service in date: Y
Calibration check OK: Y
Name of person monitoring: Rod Langley

Notes on site conditions:

16.06.2016 Weather conditions = Frequent rain showers, occassionally heavy.
23.06.2016 Weather conditions = Fine drizzle
30.06.2016 Weather conditions = Cloudy but dry
07.07.2016 Weather conditions = Fine, clear morning
14.07.2016 Weather conditions = Bright sunny day with some cloud
21.07.2016 Weather conditions = Fine sunny day.

Notes: LEL = lower explosive limit = 5%v/v. * where the flow is less than the limit of detection of the instrument, the detection limit is reported. GSVs are rounded to 3 places.

Monitoring round		Borehole details						Pressure and flow					Gas concentrations										GSV		Local conditions
Date	Time	Borehole	Single or dual gas tap	Response zone depth (m)	Depth to water or depth of hole if dry (m)	D denotes dry hole	Volume of headspace in BH (well pipie & filter pack) (m^3)	Atmospheric pressure (hPa)	Atm pressure falling / rising / steady	Relative BH pressure (hPa)	Gas flow* (l/hr)	Gas flow* (absolute value) (l/hr)	VOC (as ppm using PID)	CH_4 (%v/v)		CH_4 (%LEL)		H2S (ppm)	CO (ppm)	CO_2 (%v/v)		O_2 (%v/v)		Gas Screening Value (CH_4) (l/hr)	Gas Screening Value (CO_2) (l/hr)	Notes on condition of borehole and surrounding ground
														Initial	Steady	Initial	Steady			Initial	Steady	Initial	Steady			
16.06.2016	am	WS 01	S		1.10		0.05mØ x 5.04m	983	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.2	0.2	20.5	20.5	0.0001	0.0002	BH in good condition. Nothing to report
16.06.2016	am	WS 03	S		3.01		0.05mØ x 5.01m	983	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.6	1.6	17.8	17.8	0.0001	0.0016	BH in good condition. Nothing to report
16.06.2016	am	WS 09	S		0.33		0.05mØ x 5.01m	982	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.2	0.2	19.7	19.7	0.0001	0.0002	BH in good condition. Nothing to report
16.06.2016	am	WS 13	S		3.48		0.05mØ x 5.03m	982	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	2.1	2.1	17.9	17.9	0.0001	0.0021	BH in good condition. Nothing to report
16.06.2016	am	WS 14	S		3.76		0.05mØ x 5.04m	982	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.3	1.3	18.0	18.0	0.0001	0.0013	BH in good condition. Nothing to report
16.06.2016	am	WS 18	S		1.27		0.05mØ x 5.06m	983	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.9	0.9	18.3	18.3	0.0001	0.0009	BH in good condition. Nothing to report
16.06.2016	am	WS 19	S		1.82		0.05mØ x 4.86m	983	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	3.9	3.9	15.5	15.5	0.0001	0.0039	BH in good condition. Nothing to report
16.06.2016	am	WS 25	S		0.78		0.05mØ x 5.06m	983	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.2	1.2	19.9	19.9	0.0001	0.0012	BH in good condition. Nothing to report
16.06.2016	am	WS 26	S		1.51		0.05mØ x 5.05m	983	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.9	0.9	16.7	16.7	0.0001	0.0009	BH in good condition. Nothing to report
23.06.2016	am	WS 01	S		1.23		0.05mØ x 5.04m	997	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.4	0.4	20.0	20.0	0.0001	0.0004	BH in good condition. Nothing to report
23.06.2016	am	WS 03	S		2.94		0.05mØ x 5.01m	997	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.8	0.8	18.9	18.9	0.0001	0.0008	BH in good condition. Nothing to report
23.06.2016	am	WS 09	S		0.32		0.05mØ x 5.01m	998	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.1	0.1	16.9	16.9	0.0001	0.0001	BH in good condition. Nothing to report
23.06.2016	am	WS 13	S		3.49		0.05mØ x 5.03m	997	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	2.1	2.1	17.9	17.9	0.0001	0.0021	BH in good condition. Nothing to report
23.06.2016	am	WS 14	S		3.03		0.05mØ x 5.04m	997	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.4	1.4	18.8	18.8	0.0001	0.0014	BH in good condition. Nothing to report
23.06.2016	am	WS 18	S		1.34		0.05mØ x 5.06m	998	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.9	0.9	18.2	18.2	0.0001	0.0009	BH in good condition. Nothing to report
23.06.2016	am	WS 19	S		1.66		0.05mØ x 4.86m	998	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	3.2	3.2	15.9	15.9	0.0001	0.0032	BH in good condition. Nothing to report
23.06.2016	am	WS 25	S		0.84		0.05mØ x 5.06m	999	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.4	0.4	20.4	20.4	0.0001	0.0004	BH in good condition. Nothing to report
23.06.2016	am	WS 26	S		1.24		0.05mØ x 5.05m	999	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.1	0.1	20.7	20.7	0.0001	0.0001	BH in good condition. Nothing to report
30.06.2016	am	WS 01	S		1.39		0.05mØ x 5.04m	991	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.8	0.8	19.4	19.4	0.0001	0.0008	BH in good condition. Nothing to report
30.06.2016	am	WS 03	S		2.96		0.05mØ x 5.01m	991	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.8	0.8	19.3	19.3	0.0001	0.0008	BH in good condition. Nothing to report
30.06.2016	am	WS 09	S		0.37		0.05mØ x 5.01m	991	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.1	0.1	17.8	17.8	0.0001	0.0001	BH in good condition. Nothing to report
30.06.2016	am	WS 13	S		3.48		0.05mØ x 5.03m	990	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	2.0	2.0	18.1	18.1	0.0001	0.002	BH in good condition. Nothing to report
30.06.2016	am	WS 14	S		2.51		0.05mØ x 5.04m	990	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.3	1.3	19.8	19.8	0.0001	0.0013	BH in good condition. Nothing to report
30.06.2016	am	WS 18	S		1.70		0.05mØ x 5.06m	992	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.2	1.2	18.2	18.2	0.0001	0.0012	BH in good condition. Nothing to report
30.06.2016	am	WS 19	S		1.88		0.05mØ x 4.86m	993	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	4.4	4.4	15.2	15.2	0.0001	0.0044	BH in good condition. Nothing to report
30.06.2016	am	WS 25	S		0.98		0.05mØ x 5.06m	990	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.2	0.2	20.8	20.8	0.0001	0.0002	BH in good condition. Nothing to report
30.06.2016	am	WS 26	S		1.61		0.05mØ x 5.05m	990	F	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.7	0.7	20.6	20.6	0.0001	0.0007	BH in good condition. Nothing to report
07.07.2016	am	WS 01	S		1.67		0.05mØ x 5.04m	999	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.8	0.8	19.5	19.5	0.0001	0.0008	BH in good condition. Nothing to report
07.07.2016	am	WS 03	S		3.02		0.05mØ x 5.01m	999	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	2.6	2.6	15.5	15.5	0.0001	0.0026	BH in good condition. Nothing to report
07.07.2016	am	WS 09	S		0.39		0.05mØ x 5.01m	1000	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.1	0.1	19.6	19.6	0.0001	0.0001	BH in good condition. Nothing to report
07.07.2016	am	WS 13	S		3.51		0.05mØ x 5.03m	999	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.9	1.9	18.5	18.5	0.0001	0.0019	BH in good condition. Nothing to report
07.07.2016	am	WS 14	S		2.16		0.05mØ x 5.04m	999	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.2	1.2	19.9	19.9	0.0001	0.0012	BH in good condition. Nothing to report
07.07.2016	am	WS 18	S		1.61		0.05mØ x 5.06m	1001	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.9	0.9	19.6	19.6	0.0001	0.0009	BH in good condition. Nothing to report
07.07.2016	am	WS 19	S		2.07		0.05mØ x 4.86m	1002	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	4.7	4.7	15.3	15.3	0.0001	0.0047	BH in good condition. Nothing to report

Monitoring round		Borehole details						Pressure and flow					Gas concentrations										GSV		Local conditions
Date	Time	Borehole	Single or dual gas tap	Response zone depth (m)	Depth to water or depth of hole if dry (m)	D denotes dry hole	Volume of headspace in BH (well pipie & filter pack) (m^3)	Atmospheric pressure (hPa)	Atm pressure falling / rising / steady	Relative BH pressure (hPa)	Gas flow* (l/hr)	Gas flow* (absolute value) (l/hr)	VOC (as ppm using PID)	CH_4 (%v/v)		CH_4 (%LEL)		H2S (ppm)	CO (ppm)	CO_2 (%v/v)		O_2 (%v/v)		Gas Screening Value (CH_4) (l/hr)	Gas Screening Value (CO_2) (l/hr)	Notes on condition of borehole and surrounding ground
														Initial	Steady	Initial	Steady			Initial	Steady	Initial	Steady			
07.07.2016	am	WS 25	S		1.17		0.05mØ x 5.06m	998	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.3	0.3	20.7	20.7	0.0001	0.0003	BH in good condition. Nothing to report
07.07.2016	am	WS 26	S		1.70		0.05mØ x 5.05m	998	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.5	0.5	20.6	20.6	0.0001	0.0005	BH in good condition. Nothing to report
14.07.2016	am	WS 01	S		1.84		0.05mØ x 5.04m	1005	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.3	0.3	20.6	20.6	0.0001	0.0003	BH in good condition. Nothing to report
14.07.2016	am	WS 03	S		3.08		0.05mØ x 5.01m	1005	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.9	0.9	18.3	18.3	0.0001	0.0009	BH in good condition. Nothing to report
14.07.2016	am	WS 09	S		0.42		0.05mØ x 5.01m	1005	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.1	0.1	14.4	14.4	0.0001	0.0001	BH in good condition. Nothing to report
14.07.2016	am	WS 13	S		3.54		0.05mØ x 5.03m	1004	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.1	0.1	20.8	20.8	0.0001	0.0001	BH in good condition. Nothing to report
14.07.2016	am	WS 14	S		1.96		0.05mØ x 5.04m	1004	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.3	1.3	19.9	19.9	0.0001	0.0013	BH in good condition. Nothing to report
14.07.2016	am	WS 18	S		1.55		0.05mØ x 5.06m	1006	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.3	1.3	20.2	20.2	0.0001	0.0013	BH in good condition. Nothing to report
14.07.2016	am	WS 19	S		2.20		0.05mØ x 4.86m	1007	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	4.9	4.9	16.0	16.0	0.0001	0.0049	BH in good condition. Nothing to report
14.07.2016	am	WS 25	S		1.28		0.05mØ x 5.06m	1003	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	1.1	1.1	19.7	19.7	0.0001	0.0011	BH in good condition. Nothing to report
14.07.2016	am	WS 26	S		1.82		0.05mØ x 5.05m	1003	S	0	0.1	0.1		0.1	0.1	0.1	0.1	1	1	0.6	0.6	20.5	20.5	0.0001	0.0006	BH in good condition. Nothing to report

Ground Gas Risk Assessment

Hydrock

Job Number	C 161279
Job Name	Kraft, Banbury
Client	DB Symmetry

Data All Data

Max CH4	Max C02	Worst Case Flow	Worst Case GSV Methane	Worst Case GSV CO_2
0.1	5.4	0.1	0.0001	0.0054

Number of Readings	54
Number of Monitoring Rounds	6
Number of Readings with Flow Rate	54

CIRIA C665 Assessment

	Methane		Carbon Dioxide	
	Max Value	GSV	Max Value	GSV
CS1	54	54	53	54
CS2	0	0	1	0
CS3	N/A	0	N/A	0
CS4	N/A	0	N/A	0
CS5	N/A	0	N/A	0
CS6	N/A	0	N/A	0

Location	Pressure Trend	Date	Relative Pressure (mb)	Flow Rate (l/hr)	Atmos. Pressure (m.bar)	CH_4 (% vol)		(%LEL)		CO_2 (% vol)		O_2 (% vol)		GSV – CH4	GSV – CO_2
						Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady		
WS 01	S	07.07.2016	0.00	0.1	999	0.1	0.1	0.1	0.1	0.8	0.8	19.5	19.5	0.0001	0.0008
WS 03	S	07.07.2016	0.00	0.1	999	0.1	0.1	0.1	0.1	2.6	2.6	15.5	15.5	0.0001	0.0026
WS 09	S	07.07.2016	0.00	0.1	1000	0.1	0.1	0.1	0.1	0.1	0.1	19.6	19.6	0.0001	0.0001
WS 13	S	07.07.2016	0.00	0.1	999	0.1	0.1	0.1	0.1	1.9	1.9	18.5	18.5	0.0001	0.0019
WS 14	S	07.07.2016	0.00	0.1	999	0.1	0.1	0.1	0.1	1.2	1.2	19.9	19.9	0.0001	0.0012
WS 18	S	07.07.2016	0.00	0.1	1001	0.1	0.1	0.1	0.1	0.9	0.9	19.6	19.6	0.0001	0.0009
WS 19	S	07.07.2016	0.00	0.1	1002	0.1	0.1	0.1	0.1	4.7	4.7	15.3	15.3	0.0001	0.0047
WS 25	S	07.07.2016	0.00	0.1	998	0.1	0.1	0.1	0.1	0.3	0.3	20.7	20.7	0.0001	0.0003
WS 26	S	07.07.2016	0.00	0.1	998	0.1	0.1	0.1	0.1	0.5	0.5	20.6	20.6	0.0001	0.0005
WS 01	S	14.07.2016	0.00	0.1	1005	0.1	0.1	0.1	0.1	0.3	0.3	20.6	20.6	0.0001	0.0003
WS 03	S	14.07.2016	0.00	0.1	1005	0.1	0.1	0.1	0.1	0.9	0.9	18.3	18.3	0.0001	0.0009
WS 09	S	14.07.2016	0.00	0.1	1005	0.1	0.1	0.1	0.1	0.1	0.1	14.4	14.4	0.0001	0.0001
WS 13	S	14.07.2016	0.00	0.1	1004	0.1	0.1	0.1	0.1	0.1	0.1	20.8	20.8	0.0001	0.0001
WS 14	S	14.07.2016	0.00	0.1	1004	0.1	0.1	0.1	0.1	1.3	1.3	19.9	19.9	0.0001	0.0013
WS 18	S	14.07.2016	0.00	0.1	1006	0.1	0.1	0.1	0.1	1.3	1.3	20.2	20.2	0.0001	0.0013
WS 19	S	14.07.2016	0.00	0.1	1007	0.1	0.1	0.1	0.1	4.9	4.9	16.0	16.0	0.0001	0.0049
WS 25	S	14.07.2016	0.00	0.1	1003	0.1	0.1	0.1	0.1	1.1	1.1	19.7	19.7	0.0001	0.0011
WS 26	S	14.07.2016	0.00	0.1	1003	0.1	0.1	0.1	0.1	0.6	0.6	20.5	20.5	0.0001	0.0006
WS 01	F	16.06.2016	0.00	0.1	983	0.1	0.1	0.1	0.1	0.2	0.2	20.5	20.5	0.0001	0.0002
WS 03	F	16.06.2016	0.00	0.1	983	0.1	0.1	0.1	0.1	1.6	1.6	17.8	17.8	0.0001	0.0016
WS 09	F	16.06.2016	0.00	0.1	982	0.1	0.1	0.1	0.1	0.2	0.2	19.7	19.7	0.0001	0.0002
WS 13	F	16.06.2016	0.00	0.1	982	0.1	0.1	0.1	0.1	2.1	2.1	17.9	17.9	0.0001	0.0021
WS 14	F	16.06.2016	0.00	0.1	982	0.1	0.1	0.1	0.1	1.3	1.3	18.0	18.0	0.0001	0.0013
WS 18	F	16.06.2016	0.00	0.1	983	0.1	0.1	0.1	0.1	0.9	0.9	18.3	18.3	0.0001	0.0009
WS 19	F	16.06.2016	0.00	0.1	983	0.1	0.1	0.1	0.1	3.9	3.9	15.5	15.5	0.0001	0.0039
WS 25	F	16.06.2016	0.00	0.1	983	0.1	0.1	0.1	0.1	1.2	1.2	19.9	19.9	0.0001	0.0012
WS 26	F	16.06.2016	0.00	0.1	983	0.1	0.1	0.1	0.1	0.9	0.9	16.7	16.7	0.0001	0.0009
WS 01	S	23.06.2016	0.00	0.1	997	0.1	0.1	0.1	0.1	0.4	0.4	20.0	20.0	0.0001	0.0004
WS 03	S	23.06.2016	0.00	0.1	997	0.1	0.1	0.1	0.1	0.8	0.8	18.9	18.9	0.0001	0.0008
WS 09	S	23.06.2016	0.00	0.1	998	0.1	0.1	0.1	0.1	0.1	0.1	16.9	16.9	0.0001	0.0001
WS 13	S	23.06.2016	0.00	0.1	997	0.1	0.1	0.1	0.1	2.1	2.1	17.9	17.9	0.0001	0.0021
WS 14	S	23.06.2016	0.00	0.1	997	0.1	0.1	0.1	0.1	1.4	1.4	18.8	18.8	0.0001	0.0014
WS 18	S	23.06.2016	0.00	0.1	998	0.1	0.1	0.1	0.1	0.9	0.9	18.2	18.2	0.0001	0.0009
WS 19	S	23.06.2016	0.00	0.1	998	0.1	0.1	0.1	0.1	3.2	3.2	15.9	15.9	0.0001	0.0032
WS 25	S	23.06.2016	0.00	0.1	999	0.1	0.1	0.1	0.1	0.4	0.4	20.4	20.4	0.0001	0.0004
WS 26	S	23.06.2016	0.00	0.1	999	0.1	0.1	0.1	0.1	0.1	0.1	20.7	20.7	0.0001	0.0001
WS 01	F	30.06.2016	0.00	0.1	991	0.1	0.1	0.1	0.1	0.8	0.8	19.4	19.4	0.0001	0.0008
WS 03	F	30.06.2016	0.00	0.1	991	0.1	0.1	0.1	0.1	0.8	0.8	19.3	19.3	0.0001	0.0008
WS 09	F	30.06.2016	0.00	0.1	991	0.1	0.1	0.1	0.1	0.1	0.1	17.8	17.8	0.0001	0.0001
WS 13	F	30.06.2016	0.00	0.1	990	0.1	0.1	0.1	0.1	2.0	2.0	18.1	18.1	0.0001	0.0020
WS 14	F	30.06.2016	0.00	0.1	990	0.1	0.1	0.1	0.1	1.3	1.3	19.8	19.8	0.0001	0.0013
WS 18	F	30.06.2016	0.00	0.1	992	0.1	0.1	0.1	0.1	1.2	1.2	18.2	18.2	0.0001	0.0012
WS 19	F	30.06.2016	0.00	0.1	993	0.1	0.1	0.1	0.1	4.4	4.4	15.2	15.2	0.0001	0.0044
WS 25	F	30.06.2016	0.00	0.1	990	0.1	0.1	0.1	0.1	0.2	0.2	20.8	20.8	0.0001	0.0002
WS 26	F	30.06.2016	0.00	0.1	990	0.1	0.1	0.1	0.1	0.7	0.7	20.6	20.6	0.0001	0.0007
WS 01	S	21.07.2016	0.00	0.1	1003	0.1	0.1	0.1	0.1	0.1	0.1	20.9	20.9	0.0001	0.0001
WS 03	S	21.07.2016	0.00	0.1	1003	0.1	0.1	0.1	0.1	2.3	2.3	16.7	16.7	0.0001	0.0023
WS 09	S	21.07.2016	0.00	0.1	1003	0.1	0.1	0.1	0.1	0.2	0.2	19.6	19.6	0.0001	0.0002
WS 13	S	21.07.2016	0.00	0.1	1003	0.1	0.1	0.1	0.1	1.7	1.7	18.6	18.6	0.0001	0.0017
WS 14	S	21.07.2016	0.00	0.1	1003	0.1	0.1	0.1	0.1	1.6	1.6	19.7	19.7	0.0001	0.0016
WS 18	S	21.07.2016	0.00	0.1	1003	0.1	0.1	0.1	0.1	1.5	1.5	19.2	19.2	0.0001	0.0015
WS 19	S	21.07.2016	0.00	0.1	1003	0.1	0.1	0.1	0.1	5.4	5.4	15.9	15.9	0.0001	0.0054
WS 25	S	21.07.2016	0.00	0.1	1001	0.1	0.1	0.1	0.1	2.4	2.4	19.1	19.1	0.0001	0.0024
WS 26	S	21.07.2016	0.00	0.1	1001	0.1	0.1	0.1	0.1	0.8	0.8	20.7	20.7	0.0001	0.0008

Appendix E

Hydrock Methodology

Hydrock Report Appendix on Hydrock Methodology, version 25 updated 01-12-15 applies to this report.

This appendix may not be included in the printed report to reduce the document size, but is included in the digital version. Alternatively, it can be supplied on request by quoting the version number and date.

Appendix F

Contamination Test Results and Statistical Analysis

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Analytical Report Number : 16-21443

Project / Site name:	Kraft, Banbury	**Samples received on:**	29/06/2016
Your job number:	C161279	**Samples instructed on:**	29/06/2016
Your order number:	N9251-C161279	**Analysis completed by:**	06/07/2016
Report Issue Number:	1	**Report issued on:**	06/07/2016
Samples Analysed:	5 water samples		

Signed:

Dr Irma Doyle
Senior Account Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 16-21443

Project / Site name: Kraft, Banbury

Your Order No: N9251-C161279

Lab Sample Number				594978	594979	594980	594981	594982
Sample Reference				WS 01	WS 09	WS 13	WS 18	WS 26
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/06/2016	23/06/2016	23/06/2016	23/06/2016	23/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.9	7.8	7.4	7.7	7.9
Electrical Conductivity	µS/cm	10	NONE	1500	610	790	530	1000
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO_4	µg/l	45	ISO 17025	110000	84500	69500	52000	8700
Chloride	mg/l	0.15	ISO 17025	220	25	41	8.8	51
Fluoride	µg/l	50	ISO 17025	570	950	420	390	440
Ammonium as NH_4	µg/l	15	ISO 17025	< 15	< 15	< 15	130	< 15
Nitrate as N	mg/l	0.01	ISO 17025	1.92	0.71	0.83	2.06	1.90
Nitrate as NO_3	mg/l	0.05	ISO 17025	8.50	3.14	3.67	9.14	8.40
Nitrite as N	µg/l	1	ISO 17025	76	9.6	27	96	30
Nitrite as NO_2	µg/l	5	ISO 17025	250	31	89	320	99
Hardness - Total	mgCaCO3/l	1	ISO 17025	212	189	377	218	5.8
Bromate (Subcontracted)	µg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols								
Total Phenols	µg/l	0.5	NONE	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
PAH Sums								
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Sum of Benzo(ghi)fluoranthene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)fluoranthene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Analytical Report Number: 16-21443

Project / Site name: Kraft, Banbury

Your Order No: N9251-C161279

Lab Sample Number				594978	594979	594980	594981	594982
Sample Reference				WS 01	WS 09	WS 13	WS 18	WS 26
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/06/2016	23/06/2016	23/06/2016	23/06/2016	23/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	64	380	100	330	< 10
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	2.6	< 1.0	< 1.0	< 1.0	< 1.0
Iron (dissolved)	mg/l	0.004	ISO 17025	0.59	0.057	0.74	0.019	0.60
Mercury (dissolved) CV-AFS	ug/l	0.005	NONE	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Calcium (dissolved)	mg/l	0.012	ISO 17025	66	49	130	66	1.8
Magnesium (dissolved)	mg/l	0.005	ISO 17025	12	16	12	13	0.35
Sodium (dissolved)	mg/l	0.01	ISO 17025	270	58	20	32	10
Zinc (total)	µg/l	0.5	ISO 17025	130	8.9	37	24	370
Aluminium (dissolved)	mg/l	0.001	ISO 17025	0.878	0.0884	0.0141	0.0056	0.371
Antimony (dissolved)	µg/l	0.4	ISO 17025	1.6	0.7	1.3	2.7	1.5
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.91	0.64	2.16	< 0.15	1.61
Barium (dissolved)	µg/l	0.06	ISO 17025	65	5.8	10	9.9	51
Boron (dissolved)	µg/l	10	ISO 17025	64	380	100	330	< 10
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	2.6	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	2.6	0.3	< 0.2	< 0.2	0.9
Cobalt (dissolved)	µg/l	0.2	ISO 17025	0.6	0.7	1.9	< 0.2	2.5
Copper (dissolved)	µg/l	0.5	ISO 17025	3.0	< 0.5	< 0.5	1.7	4.6
Lead (dissolved)	µg/l	0.2	ISO 17025	0.6	0.3	< 0.2	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	6.3	77	270	11	50
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	3.9	1.1	1.8	1.4	7.9
Nickel (dissolved)	µg/l	0.5	ISO 17025	5.8	2.5	1.5	1.5	8.2
Selenium (dissolved)	µg/l	0.6	ISO 17025	18	< 0.6	< 0.6	3.4	51
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	0.25	0.21	< 0.20	0.44	0.45
Vanadium (dissolved)	µg/l	0.2	ISO 17025	7.9	1.3	0.2	0.6	11
Zinc (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	1.0	6.2
Monoaromatics								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

Analytical Report Number: 16-21443

Project / Site name: Kraft, Banbury

Your Order No: N9251-C161279

Lab Sample Number				594978	594979	594980	594981	594982
Sample Reference				WS 01	WS 09	WS 13	WS 18	WS 26
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				23/06/2016	23/06/2016	23/06/2016	23/06/2016	23/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
P-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 16-21443

Project / Site name: Kraft, Banbury

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH4 in water	Determination of Ammonium/Ammonia/Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Bromate in Water	Determination of Bromate by colorimetry	In house method based on Standard Methods for the examination of water and waste water,		W	NONE
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082 B	W	ISO 17025
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Electrical conductivity of water	Determination of electrical conductivity in water by electrometric measurement.	In-house method	L031-PL	W	NONE
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW, PW, GW.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Mercury Low Level (Dissolved) in Water	Mercury in water by millennium merlin AFS analyser	In-house method based on USEPA method 1631	L085-PL	W	NONE
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	NONE
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L077-PL	W	ISO 17025
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025

Analytical Report Number : 16-21443

Project / Site name: Kraft, Banbury

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Phenols, speciated, in water, by GCMS	Determination of speciated phenols in water by extraction in hexane followed by GC-MS.	In-house method based on USEPA 8270	L070-PL	W	NONE
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L0102B-PL	W	ISO 17025
Speciated EPA-16 PAHs in water (LOW LEVEL Dets)	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L070-PL	W	NONE
Specific PAH sums in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
TPH Chromatogram	TPH Chromatogram.	In-house method	L070-PL	W	NONE
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L070-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref
WS 01		W	16-21443	594978	c	Ammoniacal Nitrogen as N in water	L082-PL
WS 01		W	16-21443	594978	c	Ammonium as NH4 in water	L082-PL
WS 01		W	16-21443	594978	c	Electrical conductivity of water	L031-PL
WS 01		W	16-21443	594978	c	Nitrate as N in water	L078-PL
WS 01		W	16-21443	594978	c	Nitrate in water	L078-PL
WS 01		W	16-21443	594978	c	Nitrite as N in water	L077-Pl
WS 01		W	16-21443	594978	c	Nitrite in water	L077-PL
WS 01		W	16-21443	594978	c	pH in water	L005-PL
WS 09		W	16-21443	594979	c	Ammoniacal Nitrogen as N in water	L082-PL
WS 09		W	16-21443	594979	c	Ammonium as NH4 in water	L082-PL
WS 09		W	16-21443	594979	c	Electrical conductivity of water	L031-PL
WS 09		W	16-21443	594979	c	Nitrate as N in water	L078-PL
WS 09		W	16-21443	594979	c	Nitrate in water	L078-PL
WS 09		W	16-21443	594979	c	Nitrite as N in water	L077-Pl
WS 09		W	16-21443	594979	c	Nitrite in water	L077-PL
WS 09		W	16-21443	594979	c	pH in water	L005-PL
WS 13		W	16-21443	594980	c	Ammoniacal Nitrogen as N in water	L082-PL
WS 13		W	16-21443	594980	c	Ammonium as NH4 in water	L082-PL
WS 13		W	16-21443	594980	c	Electrical conductivity of water	L031-PL
WS 13		W	16-21443	594980	c	Nitrate as N in water	L078-PL
WS 13		W	16-21443	594980	c	Nitrate in water	L078-PL
WS 13		W	16-21443	594980	c	Nitrite as N in water	L077-Pl
WS 13		W	16-21443	594980	c	Nitrite in water	L077-PL
WS 13		W	16-21443	594980	c	pH in water	L005-PL
WS 18		W	16-21443	594981	c	Ammoniacal Nitrogen as N in water	L082-PL
WS 18		W	16-21443	594981	c	Ammonium as NH4 in water	L082-PL
WS 18		W	16-21443	594981	c	Electrical conductivity of water	L031-PL
WS 18		W	16-21443	594981	c	Nitrate as N in water	L078-PL
WS 18		W	16-21443	594981	c	Nitrate in water	L078-PL
WS 18		W	16-21443	594981	c	Nitrite as N in water	L077-Pl
WS 18		W	16-21443	594981	c	Nitrite in water	L077-PL
WS 18		W	16-21443	594981	c	pH in water	L005-PL
WS 26		W	16-21443	594982	c	Ammoniacal Nitrogen as N in water	L082-PL
WS 26		W	16-21443	594982	c	Ammonium as NH4 in water	L082-PL
WS 26		W	16-21443	594982	c	Electrical conductivity of water	L031-PL
WS 26		W	16-21443	594982	c	Nitrate as N in water	L078-PL
WS 26		W	16-21443	594982	c	Nitrate in water	L078-PL
WS 26		W	16-21443	594982	c	Nitrite as N in water	L077-Pl
WS 26		W	16-21443	594982	c	Nitrite in water	L077-PL
WS 26		W	16-21443	594982	c	pH in water	L005-PL

Test Deviation code
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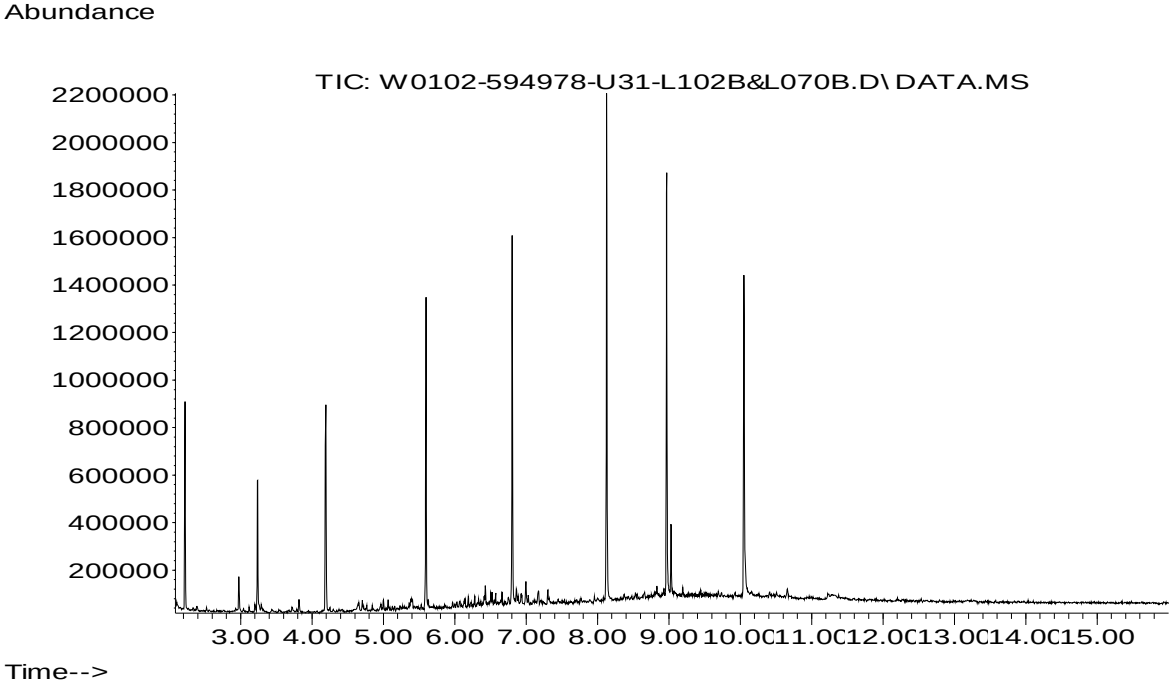

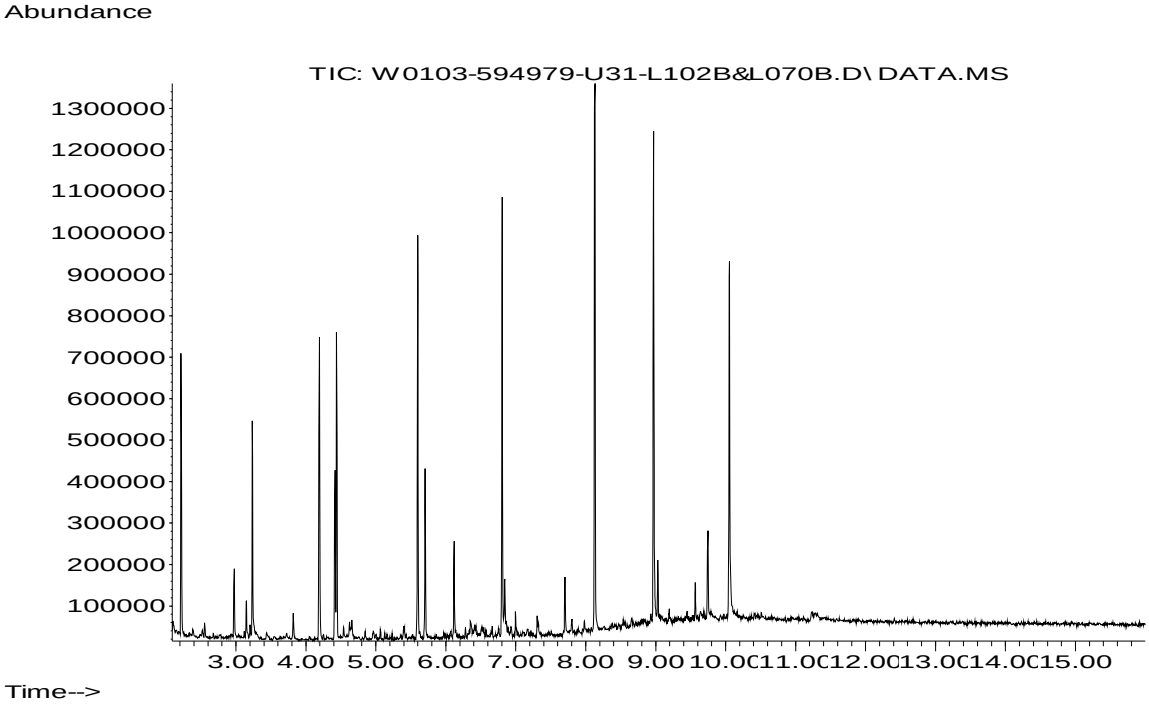

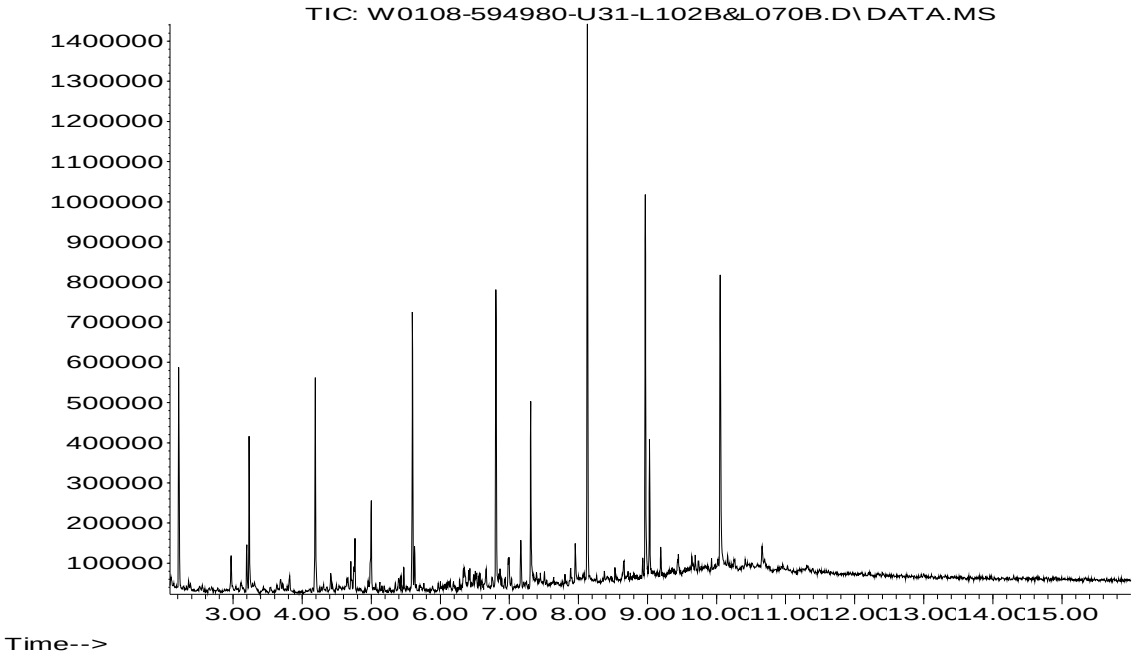

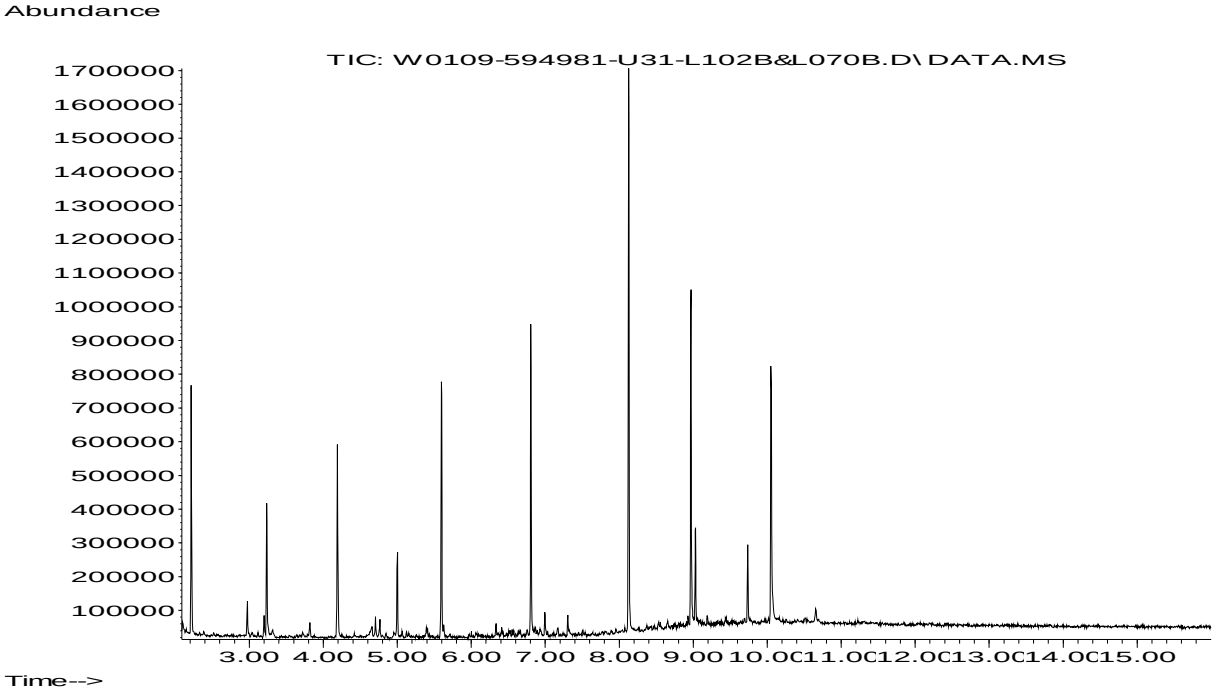

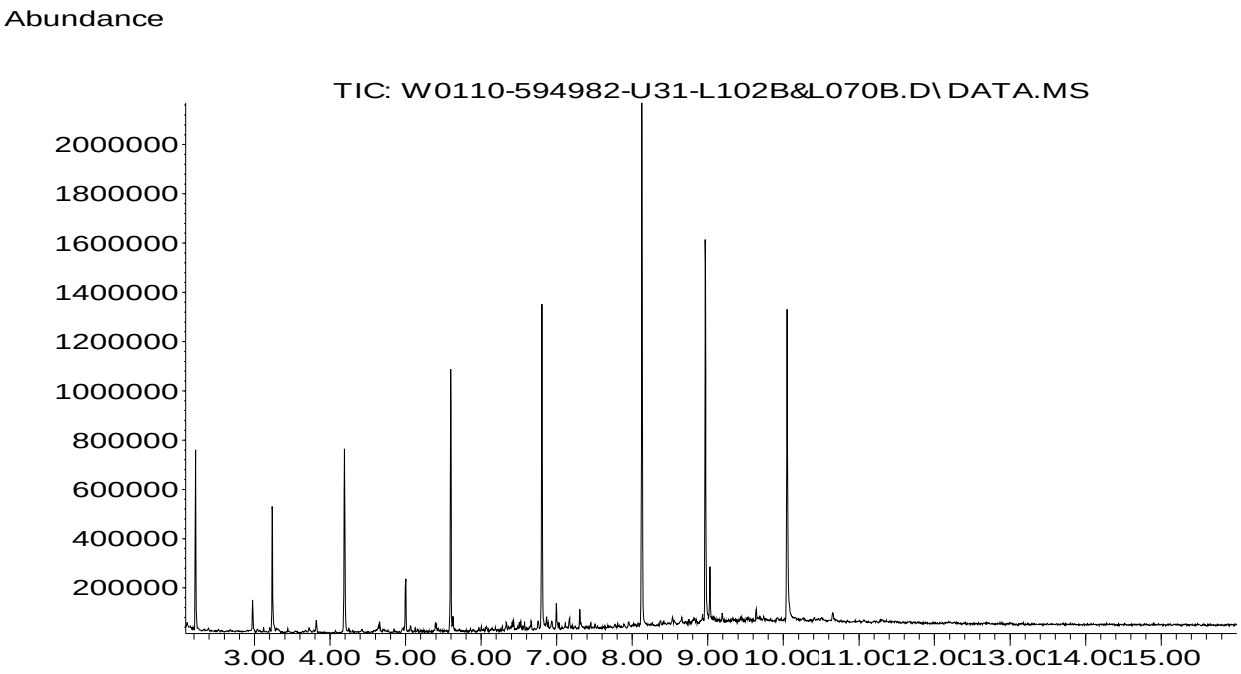

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Analytical Report Number : 16-20400

Replaces Analytical Report Number : 16-20400, issue no. 1

Project / Site name:	Kraft Phase 2	**Samples received on:**	10/06/2016
Your job number:	C161279	**Samples instructed on:**	17/06/2016
Your order number:	N9203-C161279	**Analysis completed by:**	29/06/2016
Report Issue Number:	2	**Report issued on:**	29/06/2016
Samples Analysed:	38 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589308	589309	589310	589311	589312
Sample Reference				BH01	BH01	BH02	BH02	BH03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.10	0.50	0.60
Date Sampled				26/05/2016	26/05/2016	31/05/2016	31/05/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	21	13	16	16	13
Total mass of sample received	kg	0.001	NONE	0.44	0.41	0.44	0.52	0.49
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Amosite	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	< 0.001	-
General Inorganics								
pH	pH Units	N/A	MCERTS	7.9	8.3	8.3	8.4	8.2
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0099	0.013	0.027	0.054	0.013
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	9.9	13.2	26.7	54.3	13.4
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.023	0.0042	0.015	0.0056	0.012
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.67	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.76	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	6.0	0.53	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	1.4	0.12	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	11	1.2	< 0.10
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	8.6	0.93	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	6.6	0.79	< 0.10
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	5.0	0.70	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	7.7	1.2	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	2.9	0.44	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	5.0	0.80	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	3.2	0.41	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.76	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	3.4	0.52	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	63.2	7.63	< 1.60

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589308	589309	589310	589311	589312
Sample Reference				BH01	BH01	BH02	BH02	BH03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.10	0.50	0.60
Date Sampled				26/05/2016	26/05/2016	31/05/2016	31/05/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	33	33	41	35	36
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.4	1.5	0.84	1.4	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	1.5	0.8	0.7	0.9	1.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	64	62	38	53	63
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	64	62	38	53	63
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.8	5.4	15	12	25
Lead (aqua regia extractable)	mg/kg	1	MCERTS	52	34	28	23	73
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	35	40	18	43	35
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.7	< 1.0	< 1.0	1.2	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	87	98	71	92	98
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	100	89	75	93	92
Monoaromatics								
Benzene	ug/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	6.2	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	11	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	35	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	-	-	46	< 10	< 10
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	29	< 8.4	< 8.4
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	8.4	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	76	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	210	39	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	120	31	< 8.4

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589308	589309	589310	589311	589312
Sample Reference				BH01	BH01	BH02	BH02	BH03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.10	0.50	0.60
Date Sampled				26/05/2016	26/05/2016	31/05/2016	31/05/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	ISO 17025	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	ISO 17025	-	-	-	-	-
1,1-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	NONE	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	NONE	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	NONE	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	NONE	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
N-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	NONE	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	NONE	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
Tert-Butylbenzene	µg/kg	1	NONE	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
Sec-Butylbenzene	µg/kg	1	NONE	-	-	-	-	-
1,3-dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
P-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	-	-	-	-

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589308	589309	589310	589311	589312
Sample Reference				BH01	BH01	BH02	BH02	BH03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.10	0.50	0.60
Date Sampled				26/05/2016	26/05/2016	31/05/2016	31/05/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007	-	-	-

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589313	589314	589315	589316	589317
Sample Reference				BH03	BH04	BH04	WS01	WS01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.60	1.10	0.40	1.00
Date Sampled				02/06/2016	06/06/2016	06/06/2016	07/06/2016	07/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	19	22	21	20	9.6
Total mass of sample received	kg	0.001	NONE	0.46	0.54	0.54	0.15	0.59
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH	pH Units	N/A	MCERTS	8.0	7.4	8.3	8.2	8.8
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.016	0.055	0.040	0.050	0.031
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	16.4	55.2	39.8	49.6	31.0
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.0059	0.024	0.0027	0.0021	< 0.0010
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	0.39	< 0.10	< 0.10	1.2	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.21	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	0.49	< 0.10	< 0.10	2.7	< 0.10
Pyrene	mg/kg	0.1	MCERTS	0.38	< 0.10	< 0.10	1.9	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	1.3	< 0.10
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.3	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	1.2	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	1.1	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.76	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.50	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.60	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	< 1.60	12.9	< 1.60

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589313	589314	589315	589316	589317
Sample Reference				BH03	BH04	BH04	WS01	WS01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.60	1.10	0.40	1.00
Date Sampled				02/06/2016	06/06/2016	06/06/2016	07/06/2016	07/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	32	23	18	94	23
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	1.1	1.3	3.0	0.42
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	3.1	1.3	0.6	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	61	59	41	170	25
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	61	59	41	170	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.4	41	10	< 1.0	< 1.0
Lead (aqua regia extractable)	mg/kg	1	MCERTS	32	72	14	8.7	9.1
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	36	29	32	63	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	83	88	70	270	50
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	89	98	75	160	27
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	< 8.0	20
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	< 10	-	-	< 10	20
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	< 8.4	29
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	< 10	44
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	< 8.4	60

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589313	589314	589315	589316	589317
Sample Reference				BH03	BH04	BH04	WS01	WS01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.60	1.10	0.40	1.00
Date Sampled				02/06/2016	06/06/2016	06/06/2016	07/06/2016	07/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Chloroethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
1,1-dichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1-dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,2-dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,2-dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Tribromomethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
N-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Tert-Butylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Sec-Butylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,3-dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
P-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
1,2-dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,4-dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589313	589314	589315	589316	589317
Sample Reference				BH03	BH04	BH04	WS01	WS01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.60	1.10	0.40	1.00
Date Sampled				02/06/2016	06/06/2016	06/06/2016	07/06/2016	07/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	< 0.007	< 0.007

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589318	589319	589320	589321	589322
Sample Reference				WS03	WS03	WS04	WS05	WS05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.60	0.30	0.10	0.50
Date Sampled				07/06/2016	07/06/2016	07/06/2016	08/06/2016	08/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	12	17	12	16
Total mass of sample received	kg	0.001	NONE	0.46	0.52	0.52	0.49	0.48
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile & Amosite	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	0.076	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	0.076	-	-	-
General Inorganics								
pH	pH Units	N/A	MCERTS	8.2	8.5	8.4	8.6	8.0
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.016	0.053	0.081	0.034	0.023
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	15.7	52.5	81.3	33.7	22.9
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.011	0.016	0.0074	0.0072	0.0062
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	0.32	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.15	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	1.3	< 0.10	< 0.10	< 0.10
Pyrene	mg/kg	0.1	MCERTS	< 0.10	1.3	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	1.4	< 0.10	< 0.10	< 0.10
Chrysene	mg/kg	0.05	MCERTS	< 0.05	1.5	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	4.8	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	2.6	< 0.10	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	5.1	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	3.2	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.77	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	5.5	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	27.9	< 1.60	< 1.60	< 1.60

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589318	589319	589320	589321	589322
Sample Reference				WS03	WS03	WS04	WS05	WS05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.60	0.30	0.10	0.50
Date Sampled				07/06/2016	07/06/2016	07/06/2016	08/06/2016	08/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	54	29	41	22	26
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.5	1.2	1.4	1.2	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3	1.3	1.3	0.9	1.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	75	67	67	36	50
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	75	67	67	36	50
Copper (aqua regia extractable)	mg/kg	1	MCERTS	10	6.2	6.4	11	7.8
Lead (aqua regia extractable)	mg/kg	1	MCERTS	34	39	25	15	24
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	48	28	38	36	38
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.8	< 1.0	1.2	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	150	100	100	69	93
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	100	90	77	84
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	1.4	1.8	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	5.2	59	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	25	100	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	250	75	-	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	< 10	270	180	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	180	24	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	7.0	26	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	33	82	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	480	65	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	470	20	-	-

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589318	589319	589320	589321	589322
Sample Reference				WS03	WS03	WS04	WS05	WS05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.60	0.30	0.10	0.50
Date Sampled				07/06/2016	07/06/2016	07/06/2016	08/06/2016	08/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Chloroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
1,1-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1-dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,2-dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,2-dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Tetrachloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Tribromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
N-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
Sec-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
1,3-dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
P-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
1,2-dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
1,4-dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589318	589319	589320	589321	589322
Sample Reference				WS03	WS03	WS04	WS05	WS05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.60	0.30	0.10	0.50
Date Sampled				07/06/2016	07/06/2016	07/06/2016	08/06/2016	08/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589323	589324	589325	589326	589327
Sample Reference				WS07	WS07	WS08	WS09	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.30	1.10	0.40
Date Sampled				08/06/2016	08/06/2016	08/06/2016	08/06/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	20	13	26	19	15
Total mass of sample received	kg	0.001	NONE	0.48	0.32	0.13	0.55	0.48
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH	pH Units	N/A	MCERTS	7.4	7.8	8.5	8.1	8.3
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0091	0.0082	0.015	0.29	0.038
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	9.1	8.2	15.1	291	38.0
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.011	0.0049	< 0.0010	0.011	0.0017
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.51	0.71	< 0.10
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.39	0.55	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.25	0.39	< 0.10
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.20	0.36	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.40	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.30	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.34	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	< 1.60	3.05	< 1.60

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589323	589324	589325	589326	589327
Sample Reference				WS07	WS07	WS08	WS09	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.30	1.10	0.40
Date Sampled				08/06/2016	08/06/2016	08/06/2016	08/06/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	45	39	25	23	120
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.4	1.2	0.12	1.2	3.3
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.6	0.5	1.0	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	55	37	6.0	52	170
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	55	37	6.0	52	170
Copper (aqua regia extractable)	mg/kg	1	MCERTS	10	5.9	5.1	18	< 1.0
Lead (aqua regia extractable)	mg/kg	1	MCERTS	81	31	4.6	10	9.4
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	31	25	4.9	55	80
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	94	70	20	74	350
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	97	65	20	100	140
Monoaromatics								
Benzene	ug/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	-	-	-	< 10	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	< 8.4	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	29	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	64	-

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589323	589324	589325	589326	589327
Sample Reference				WS07	WS07	WS08	WS09	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.30	1.10	0.40
Date Sampled				08/06/2016	08/06/2016	08/06/2016	08/06/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Chloroethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Vinyl Chloride	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
1,1-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1-dichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	-	-	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-dichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	-	-	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-dichloropropane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Bromodichloromethane	µg/kg	1	NONE	-	-	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Tetrachloroethene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Tribromomethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Isopropylbenzene	µg/kg	1	NONE	-	-	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
N-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	-	-	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Tert-Butylbenzene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Sec-Butylbenzene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,3-dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
P-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
1,2-dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,4-dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Butylbenzene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	-	-	-	< 1.0

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589323	589324	589325	589326	589327
Sample Reference				WS07	WS07	WS08	WS09	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.30	1.10	0.40
Date Sampled				08/06/2016	08/06/2016	08/06/2016	08/06/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589328	589329	589330	589331	589332
Sample Reference				WS11	WS12	WS12	WS13	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.30	0.60	0.30	0.60
Date Sampled				02/06/2016	03/06/2016	03/06/2016	02/06/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	16	13	9.3	10
Total mass of sample received	kg	0.001	NONE	0.45	1.0	0.43	1.0	0.46
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH	pH Units	N/A	MCERTS	8.0	8.0	8.2	8.5	8.2
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.043	0.042	0.034	0.057	0.053
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	43.2	42.0	33.7	57.3	52.5
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.0017	< 0.0010	0.0018	< 0.0010	0.0014
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	< 1.60	< 1.60	< 1.60

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589328	589329	589330	589331	589332
Sample Reference				WS11	WS12	WS12	WS13	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.30	0.60	0.30	0.60
Date Sampled				02/06/2016	03/06/2016	03/06/2016	02/06/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	190	120	170	23	54
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	6.1	4.5	4.9	0.33	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	0.6	0.7	0.3	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	330	260	280	11	78
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	330	260	280	11	78
Copper (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	8.0	< 1.0
Lead (aqua regia extractable)	mg/kg	1	MCERTS	10	6.7	7.7	5.5	5.2
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	130	120	130	13	30
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	2.4	1.3	2.3	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	680	480	600	34	130
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	220	150	210	28	57
Monoaromatics								
Benzene	ug/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	-	-	-	< 10	< 10
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	< 8.4	< 8.4
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	< 8.4	< 8.4

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589328	589329	589330	589331	589332
Sample Reference				WS11	WS12	WS12	WS13	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.30	0.60	0.30	0.60
Date Sampled				02/06/2016	03/06/2016	03/06/2016	02/06/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Chloroethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,1-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,1-dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,2-dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,2-dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Tribromomethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
N-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Tert-Butylbenzene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
Sec-Butylbenzene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
1,3-dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
P-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,2-dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
1,4-dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Butylbenzene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	< 1.0

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589328	589329	589330	589331	589332
Sample Reference				WS11	WS12	WS12	WS13	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.30	0.60	0.30	0.60
Date Sampled				02/06/2016	03/06/2016	03/06/2016	02/06/2016	02/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589333	589334	589335	589336	589337
Sample Reference				WS15	WS15	WS16	WS16	WS18
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.60	0.30	0.70	0.30
Date Sampled				06/06/2016	06/06/2016	03/06/2016	03/06/2016	09/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	5.4	11	10	18	20
Total mass of sample received	kg	0.001	NONE	0.49	0.44	0.58	0.42	0.50
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH	pH Units	N/A	MCERTS	8.7	8.3	8.6	7.5	8.1
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.056	0.077	0.12	0.47	0.010
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	56.3	77.2	119	471	10.2
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	< 0.0010	0.0029	< 0.0010	0.013	0.014
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.51	< 0.10	1.0	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.28	< 0.10	0.90	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	0.21	8.0	0.65	2.1	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	2.2	0.13	0.24	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	0.64	31	0.92	0.42	< 0.10
Pyrene	mg/kg	0.1	MCERTS	0.48	22	0.67	0.27	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.34	14	0.50	0.12	< 0.10
Chrysene	mg/kg	0.05	MCERTS	0.33	14	0.44	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.24	11	0.60	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.22	11	0.24	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.17	9.9	0.35	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	6.4	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	1.7	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	7.3	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	2.63	139	4.50	5.05	< 1.60

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589333	589334	589335	589336	589337
Sample Reference				WS15	WS15	WS16	WS16	WS18
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.60	0.30	0.70	0.30
Date Sampled				06/06/2016	06/06/2016	03/06/2016	03/06/2016	09/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.9	120	25	14	37
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.12	3.5	0.77	1.4	1.4
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	0.6	0.5	1.2	1.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	3.8	170	42	46	50
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	3.8	170	42	46	50
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	< 1.0	< 1.0	24	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	2.7	8.0	4.9	14	81
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.5	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	4.8	69	22	64	32
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.9	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	23	340	78	69	95
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	11	110	39	120	90
Monoaromatics								
Benzene	ug/kg	1	MCERTS	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	-	-	-	-	< 10
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	-	< 8.4

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589333	589334	589335	589336	589337
Sample Reference				WS15	WS15	WS16	WS16	WS18
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.60	0.30	0.70	0.30
Date Sampled				06/06/2016	06/06/2016	03/06/2016	03/06/2016	09/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Chloroethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Vinyl Chloride	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,1-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1-dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Bromodichloromethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Tetrachloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Tribromomethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Isopropylbenzene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
N-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Tert-Butylbenzene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Sec-Butylbenzene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,3-dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
P-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,2-dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,4-dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Butylbenzene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589333	589334	589335	589336	589337
Sample Reference				WS15	WS15	WS16	WS16	WS18
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.60	0.30	0.70	0.30
Date Sampled				06/06/2016	06/06/2016	03/06/2016	03/06/2016	09/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589338	589339	589340	589341	589342
Sample Reference				WS19	WS20	WS21	WS23	WS23
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.25	0.70	0.20	0.70
Date Sampled				09/06/2016	09/06/2016	09/06/2016	06/06/2016	06/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	15	17	8.7	13
Total mass of sample received	kg	0.001	NONE	0.49	0.52	0.46	0.47	0.62
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH	pH Units	N/A	MCERTS	-	7.3	8.0	10.2	8.6
Free Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	< 1	< 1
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.0081	0.033	0.41	0.12
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	8.1	32.5	405	120
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	-	0.013	0.011	0.0016	0.0024
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	-	< 0.10	0.29	0.32	< 0.10
Anthracene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	-	< 0.10	0.52	0.76	< 0.10
Pyrene	mg/kg	0.1	MCERTS	-	< 0.10	0.44	0.59	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	< 0.10	0.34	0.36	< 0.10
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	0.25	0.31	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	< 0.10	0.21	0.39	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	< 0.10	0.20	0.25	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	< 0.10	0.18	0.23	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	< 1.60	2.43	3.21	< 1.60

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589338	589339	589340	589341	589342
Sample Reference				WS19	WS20	WS21	WS23	WS23
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.25	0.70	0.20	0.70
Date Sampled				09/06/2016	09/06/2016	09/06/2016	06/06/2016	06/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	42	39	33	170
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	1.6	1.6	1.4	3.9
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.1	1.0	2.7	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	-	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	-	65	66	39	120
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	65	66	40	120
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	13	18	< 1.0	< 1.0
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	40	37	14	23
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	42	40	23	98
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	1.6	2.7
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	110	93	84	220
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	110	110	53	230
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	-	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	< 10	-	-	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	-	-

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589338	589339	589340	589341	589342
Sample Reference				WS19	WS20	WS21	WS23	WS23
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.25	0.70	0.20	0.70
Date Sampled				09/06/2016	09/06/2016	09/06/2016	06/06/2016	06/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Chloroethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
1,1-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1-dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	-
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Bromodichloromethane	µg/kg	1	NONE	< 1.0	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Tetrachloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Styrene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Tribromomethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Isopropylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
N-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	-	-	-	-
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Tert-Butylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
Sec-Butylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,3-dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
P-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
1,2-dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
1,4-dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Butylbenzene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	-	-	-	-

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589338	589339	589340	589341	589342
Sample Reference				WS19	WS20	WS21	WS23	WS23
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.25	0.70	0.20	0.70
Date Sampled				09/06/2016	09/06/2016	09/06/2016	06/06/2016	06/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589343	589344	589345		
Sample Reference				WS21	WS26	WS26		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.30	0.20	0.50		
Date Sampled				07/06/2016	06/06/2016	06/06/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	13	7.5	20		
Total mass of sample received	kg	0.001	NONE	0.51	0.53	0.52		
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected		
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-		
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-		
General Inorganics								
pH	pH Units	N/A	MCERTS	8.0	9.0	7.8		
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0099	0.13	0.021		
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	9.9	133	20.9		
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.010	0.0024	0.0046		
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	< 1.60		

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589343	589344	589345		
Sample Reference				WS21	WS26	WS26		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.30	0.20	0.50		
Date Sampled				07/06/2016	06/06/2016	06/06/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	41	8.4	20		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.6	0.31	1.0		
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	0.5	1.2		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2		
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2		
Chromium (III)	mg/kg	1	NONE	59	11	50		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	59	11	51		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.0	3.4	9.2		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	29	6.5	22		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	39	7.0	24		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	1.1		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	110	20	76		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	19	59		
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	40	< 8.0		
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	< 10	40	< 10		
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	97	< 8.4		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	45	< 10		
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	170	< 8.4		

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Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589343	589344	589345		
Sample Reference				WS21	WS26	WS26		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.30	0.20	0.50		
Date Sampled				07/06/2016	06/06/2016	06/06/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-		
Chloroethane	µg/kg	1	ISO 17025	-	-	-		
Bromomethane	µg/kg	1	ISO 17025	-	-	-		
Vinyl Chloride	µg/kg	1	ISO 17025	-	-	-		
Trichlorofluoromethane	µg/kg	1	ISO 17025	-	-	-		
1,1-dichloroethene	µg/kg	1	MCERTS	-	-	-		
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-		
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-		
1,1-dichloroethane	µg/kg	1	MCERTS	-	-	-		
2,2-Dichloropropane	µg/kg	1	NONE	-	-	-		
Trichloromethane	µg/kg	1	MCERTS	-	-	-		
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-		
1,2-dichloroethane	µg/kg	1	MCERTS	-	-	-		
1,1-Dichloropropene	µg/kg	1	NONE	-	-	-		
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-		
Benzene	µg/kg	1	MCERTS	-	-	-		
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-		
1,2-dichloropropane	µg/kg	1	MCERTS	-	-	-		
Trichloroethene	µg/kg	1	MCERTS	-	-	-		
Dibromomethane	µg/kg	1	MCERTS	-	-	-		
Bromodichloromethane	µg/kg	1	NONE	-	-	-		
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-		
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-		
Toluene	µg/kg	1	MCERTS	-	-	-		
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-		
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-		
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-		
Tetrachloroethene	µg/kg	1	MCERTS	-	-	-		
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-		
Chlorobenzene	µg/kg	1	MCERTS	-	-	-		
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	-	-		
Ethylbenzene	µg/kg	1	MCERTS	-	-	-		
p & m-xylene	µg/kg	1	MCERTS	-	-	-		
Styrene	µg/kg	1	MCERTS	-	-	-		
Tribromomethane	µg/kg	1	MCERTS	-	-	-		
o-xylene	µg/kg	1	MCERTS	-	-	-		
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-		
Isopropylbenzene	µg/kg	1	NONE	-	-	-		
Bromobenzene	µg/kg	1	MCERTS	-	-	-		
N-Propylbenzene	µg/kg	1	ISO 17025	-	-	-		
2-Chlorotoluene	µg/kg	1	NONE	-	-	-		
4-Chlorotoluene	µg/kg	1	NONE	-	-	-		
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-		
Tert-Butylbenzene	µg/kg	1	NONE	-	-	-		
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-		
Sec-Butylbenzene	µg/kg	1	NONE	-	-	-		
1,3-dichlorobenzene	µg/kg	1	ISO 17025	-	-	-		
P-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-		
1,2-dichlorobenzene	µg/kg	1	MCERTS	-	-	-		
1,4-dichlorobenzene	µg/kg	1	MCERTS	-	-	-		
Butylbenzene	µg/kg	1	NONE	-	-	-		
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-		
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-		
Hexachlorobutadiene	µg/kg	1	NONE	-	-	-		
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	-	-		

Analytical Report Number: 16-20400

Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Lab Sample Number				589343	589344	589345		
Sample Reference				WS21	WS26	WS26		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.30	0.20	0.50		
Date Sampled				07/06/2016	06/06/2016	06/06/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-		
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-		
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-		
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-		
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-		
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-		
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-		
Total PCBs	mg/kg	0.007	MCERTS	-	-	-		

Analytical Report Number: 16-20400
Project / Site name: Kraft Phase 2
Your Order No: N9203-C161279

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Saf
HSG 248.

Quantitative Analysis

"The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996:
and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and
method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, w
by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with ca

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)
589311	BH02	0.50	117	Loose Fibres	**Amosite**	< 0.001
589319	WS03	0.60	122	Hard/ Cement Type Material, Loose Fibres, Insulation Lagging	**Chrysotile & Amosite**	0.076

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

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HSG 248. Our
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Total % Asbestos in Sample
< 0.001
0.076

Analytical Report Number : 16-20400

Project / Site name: Kraft Phase 2

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
589308	BH01	None Supplied	0.10	Brown loam and clay with gravel.
589309	BH01	None Supplied	0.40	Brown clay and sand.
589310	BH02	None Supplied	0.10	Brown loam and clay with gravel.
589311	BH02	None Supplied	0.50	Brown clay and sand.
589312	BH03	None Supplied	0.60	Brown loam and clay with gravel.
589313	BH03	None Supplied	1.00	Brown clay and sand.
589314	BH04	None Supplied	0.60	Brown loam and clay with gravel.
589315	BH04	None Supplied	1.10	Brown clay and sand.
589316	WS01	None Supplied	0.40	Brown loam and sand with gravel.
589317	WS01	None Supplied	1.00	Brown clay and sand.
589318	WS03	None Supplied	0.20	Brown loam and clay with gravel.
589319	WS03	None Supplied	0.60	Brown loam and clay with gravel.
589320	WS04	None Supplied	0.30	Brown clay and loam with gravel.
589321	WS05	None Supplied	0.10	Brown clay and loam with gravel.
589322	WS05	None Supplied	0.50	Brown clay and sand.
589323	WS07	None Supplied	0.10	Brown loam and clay with gravel.
589324	WS07	None Supplied	0.40	Brown clay and sand.
589325	WS08	None Supplied	0.30	Brown clay and sand.
589326	WS09	None Supplied	1.10	Grey clay.
589327	WS11	None Supplied	0.40	Brown loam and clay with gravel.
589328	WS11	None Supplied	0.80	Brown loam and sand with gravel.
589329	WS12	None Supplied	0.30	Brown loam and sand with gravel.
589330	WS12	None Supplied	0.60	Brown loam and sand with gravel.
589331	WS13	None Supplied	0.30	Brown loam and sand with gravel.
589332	WS13	None Supplied	0.60	Brown loam and sand with gravel.
589333	WS15	None Supplied	0.30	Brown loam and sand with gravel.
589334	WS15	None Supplied	0.60	Brown loam and sand with gravel.
589335	WS16	None Supplied	0.30	Brown loam and clay with gravel.
589336	WS16	None Supplied	0.70	Grey clay.
589337	WS18	None Supplied	0.30	Brown loam and clay with gravel.
589338	WS19	None Supplied	0.30	Brown loam and clay with gravel.
589339	WS20	None Supplied	0.25	Brown loam and clay with gravel.
589340	WS21	None Supplied	0.70	Brown loam and clay with gravel.
589341	WS23	None Supplied	0.20	Brown loam and clay with gravel.
589342	WS23	None Supplied	0.70	Brown loam and clay with gravel.
589343	WS21	None Supplied	0.30	Brown loam and clay with gravel.
589344	WS26	None Supplied	0.20	Brown loam and sand.
589345	WS26	None Supplied	0.50	Brown clay and sand.

Analytical Report Number : 16-20400

Project / Site name: Kraft Phase 2

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	The analysis was carried out using documented in-house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
TPH Chromatogram	TPH Chromatogram.	In-house method	L064-PL	D	NONE

Analytical Report Number : 16-20400

Project / Site name: Kraft Phase 2

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L076-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref
BH01		S	16-20400	589308	c	Free cyanide in soil	L080-PL
BH01		S	16-20400	589308	c	Monohydric phenols in soil	L080-PL
BH01		S	16-20400	589308	c	Organic matter in soil	L023-PL
BH01		S	16-20400	589308	c	PCB's By GC-MS in soil	L027-PL
BH01		S	16-20400	589308	c	Speciated EPA-16 PAHs in soil	L064-PL
BH01		S	16-20400	589309	c	Free cyanide in soil	L080-PL
BH01		S	16-20400	589309	c	Monohydric phenols in soil	L080-PL
BH01		S	16-20400	589309	c	Organic matter in soil	L023-PL
BH01		S	16-20400	589309	c	PCB's By GC-MS in soil	L027-PL
BH01		S	16-20400	589309	c	Speciated EPA-16 PAHs in soil	L064-PL
BH02		S	16-20400	589310	c	Free cyanide in soil	L080-PL
BH02		S	16-20400	589310	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL
BH02		S	16-20400	589310	c	Organic matter in soil	L023-PL
BH02		S	16-20400	589311	c	Free cyanide in soil	L080-PL
BH02		S	16-20400	589311	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL
BH02		S	16-20400	589311	c	Organic matter in soil	L023-PL
BH03		S	16-20400	589312	c	Free cyanide in soil	L080-PL
BH03		S	16-20400	589312	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL
BH03		S	16-20400	589312	c	Organic matter in soil	L023-PL
BH03		S	16-20400	589313	c	Free cyanide in soil	L080-PL
BH03		S	16-20400	589313	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL
BH03		S	16-20400	589313	c	Organic matter in soil	L023-PL
WS03		S	16-20400	589319	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL
WS03		S	16-20400	589319	b	TPHCWG (Soil)	L076-PL
WS03		S	16-20400	589319	b	Volatile organic compounds in soil	L073B-PL
WS11		S	16-20400	589327	c	Free cyanide in soil	L080-PL
WS11		S	16-20400	589327	c	Organic matter in soil	L023-PL
WS11		S	16-20400	589327	c	Volatile organic compounds in soil	L073B-PL
WS11		S	16-20400	589328	c	Free cyanide in soil	L080-PL
WS11		S	16-20400	589328	c	Organic matter in soil	L023-PL
WS11		S	16-20400	589328	c	Volatile organic compounds in soil	L073B-PL
WS13		S	16-20400	589331	c	Free cyanide in soil	L080-PL
WS13		S	16-20400	589331	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL
WS13		S	16-20400	589331	c	Organic matter in soil	L023-PL
WS13		S	16-20400	589331	c	Volatile organic compounds in soil	L073B-PL
WS13		S	16-20400	589332	c	Free cyanide in soil	L080-PL
WS13		S	16-20400	589332	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL
WS13		S	16-20400	589332	c	Organic matter in soil	L023-PL
WS13		S	16-20400	589332	c	Volatile organic compounds in soil	L073B-PL

Test Deviation code
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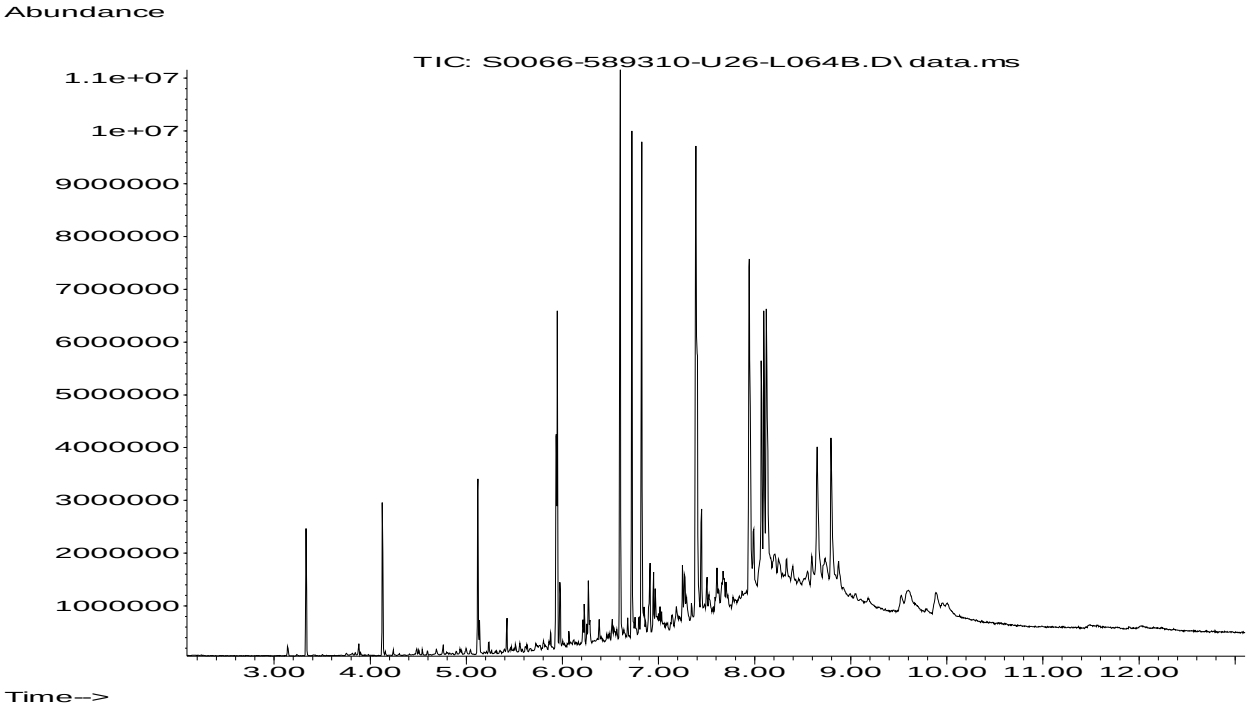

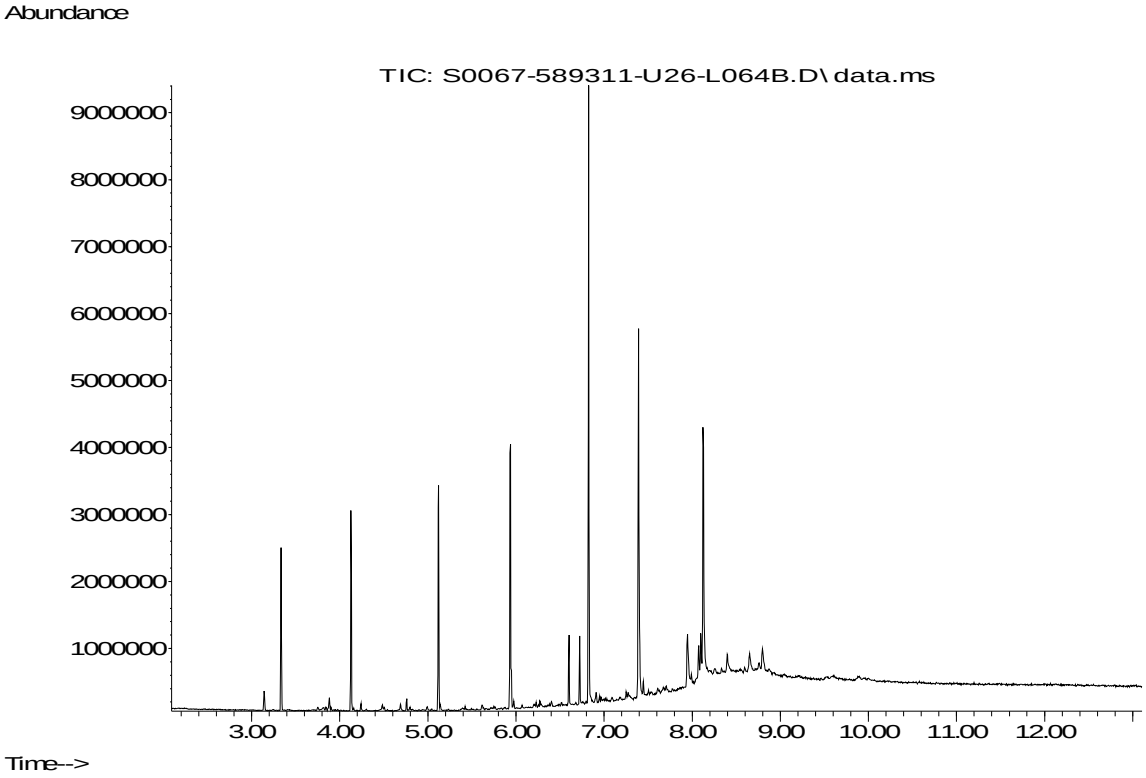

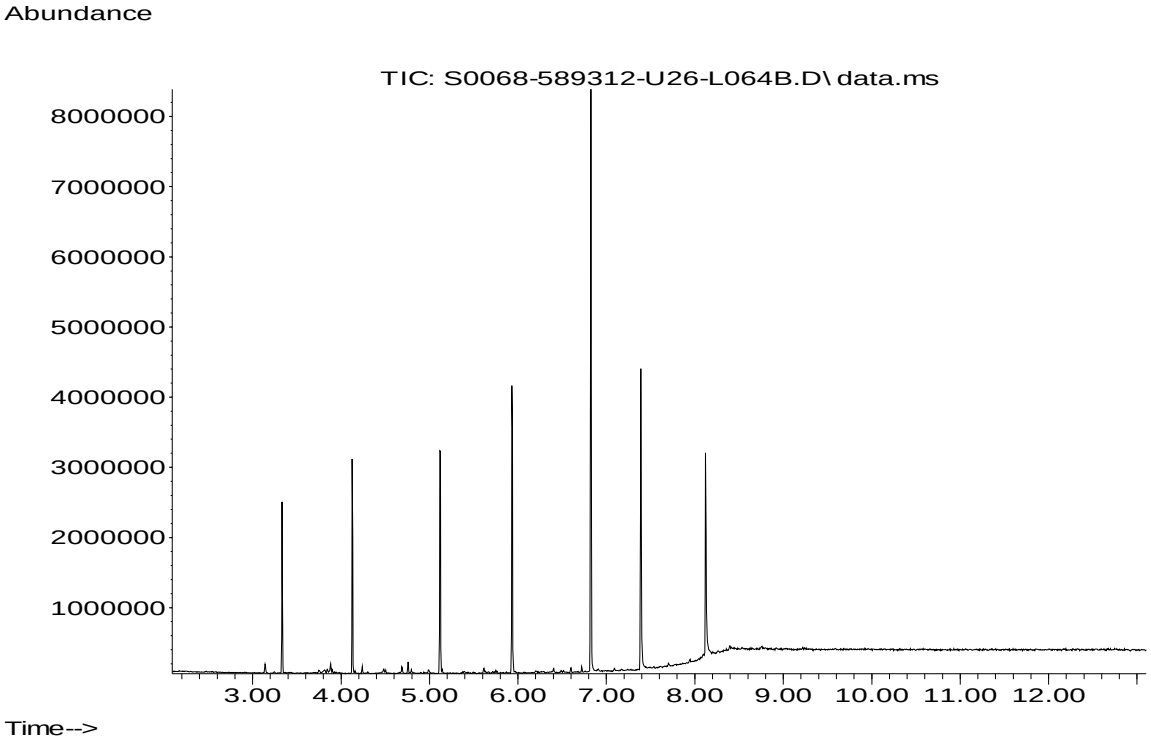

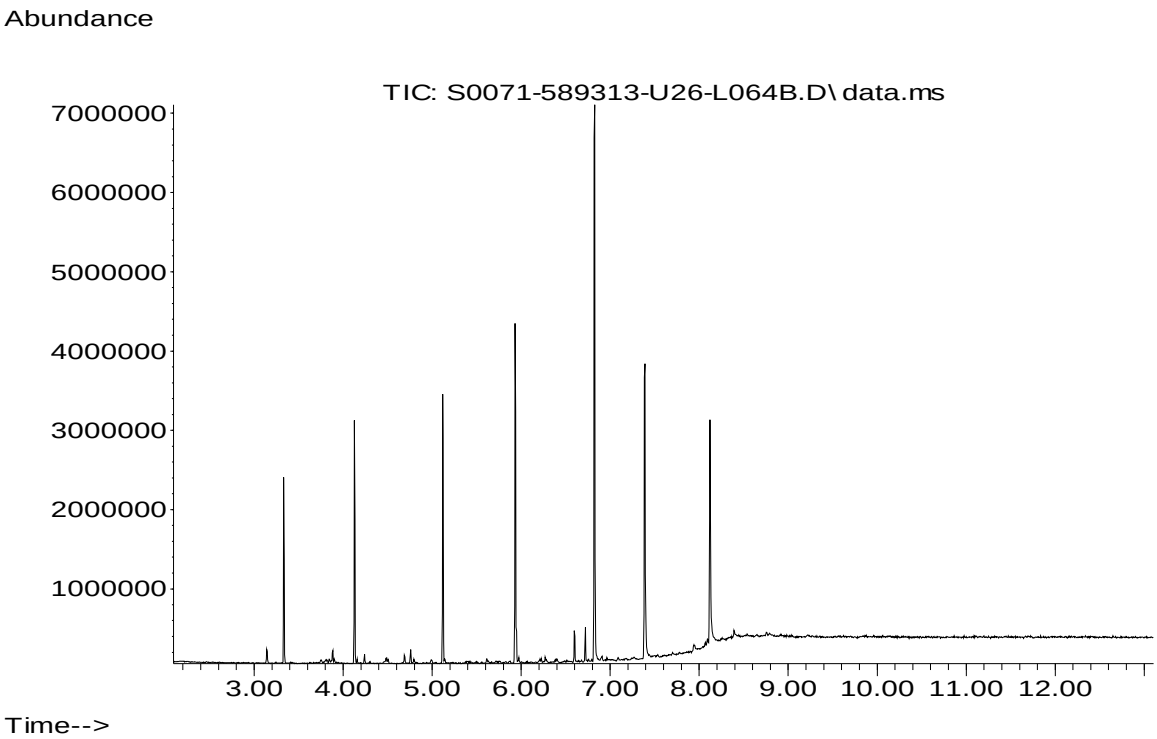

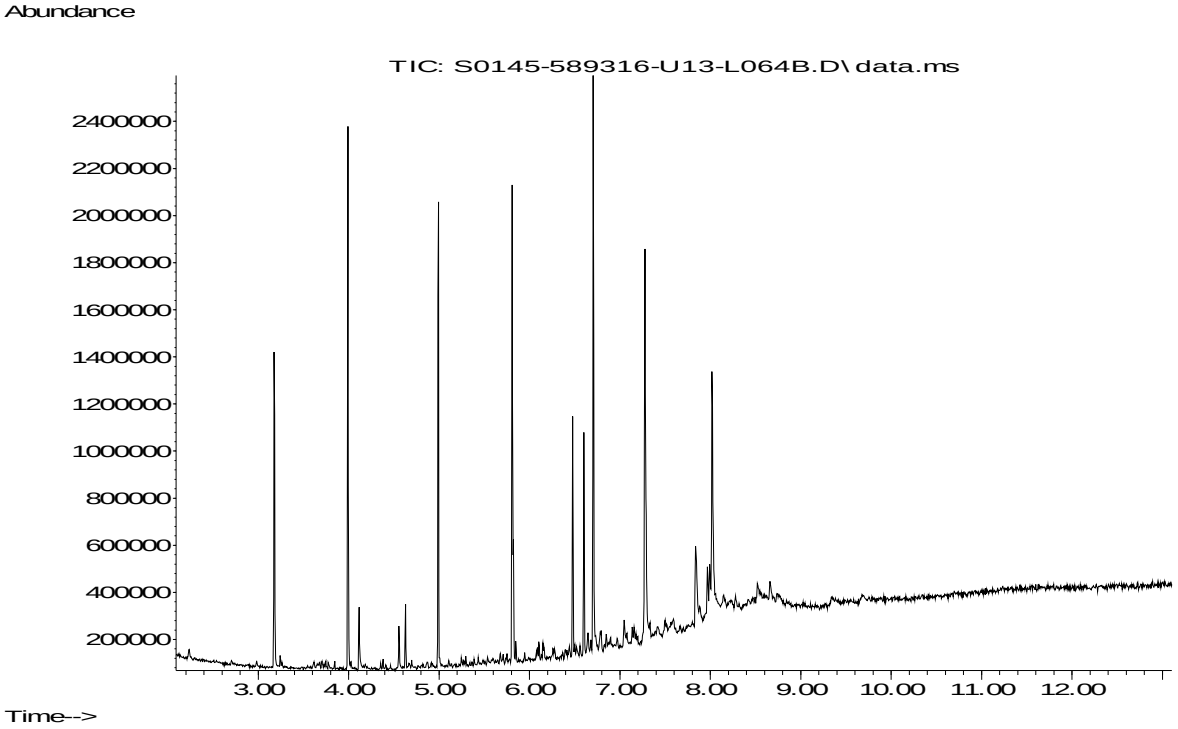

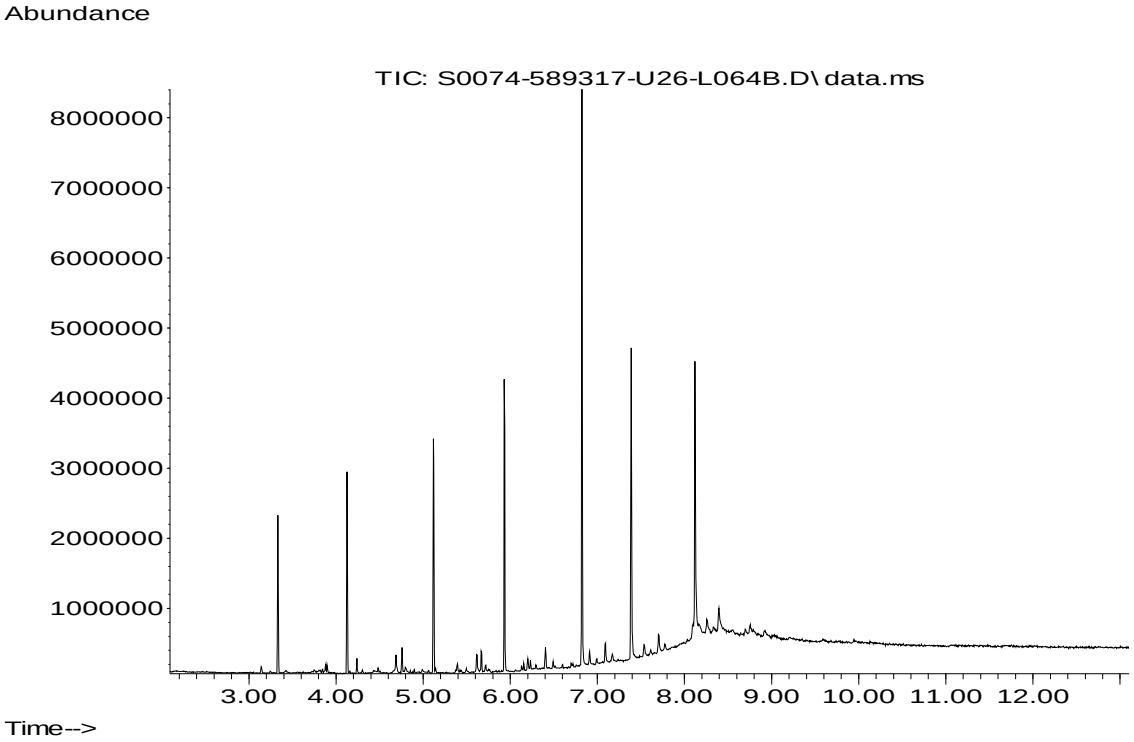

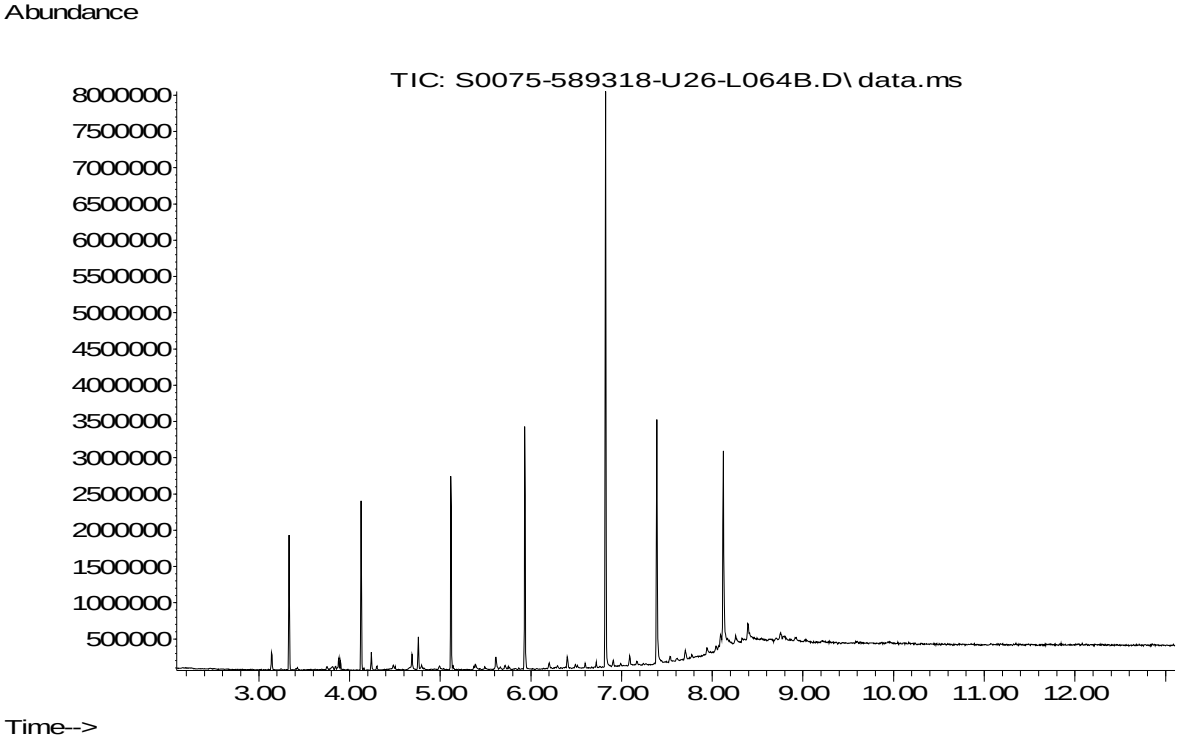

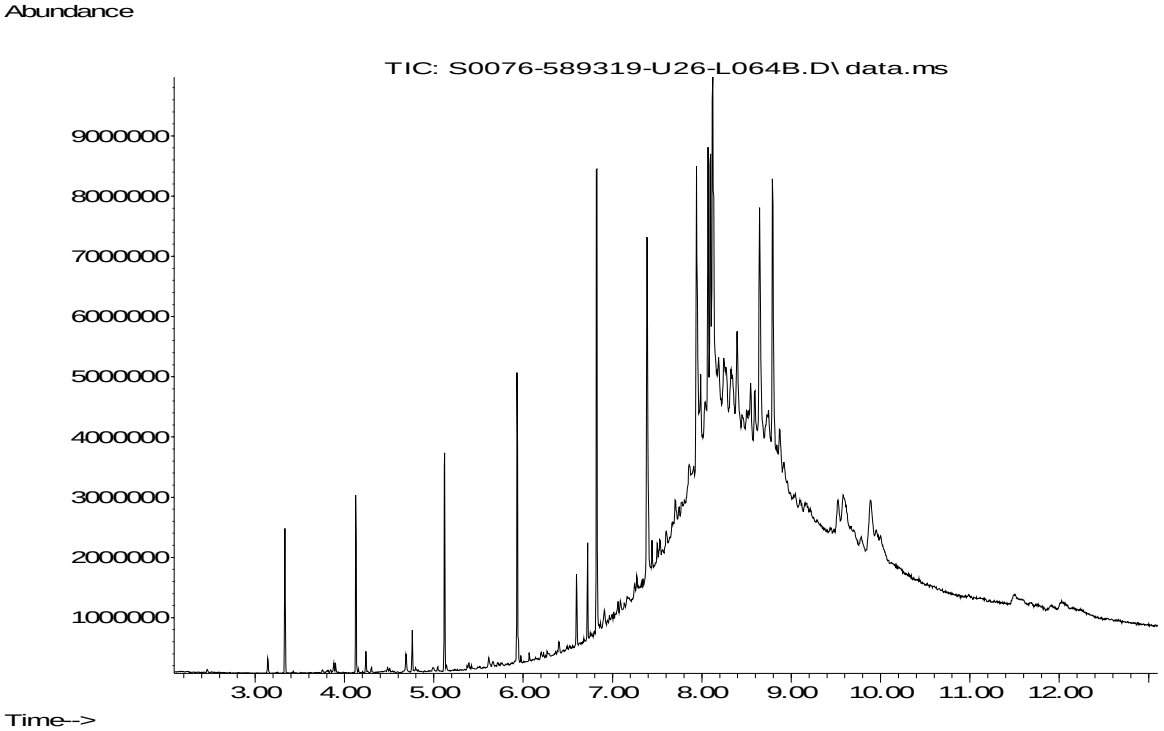

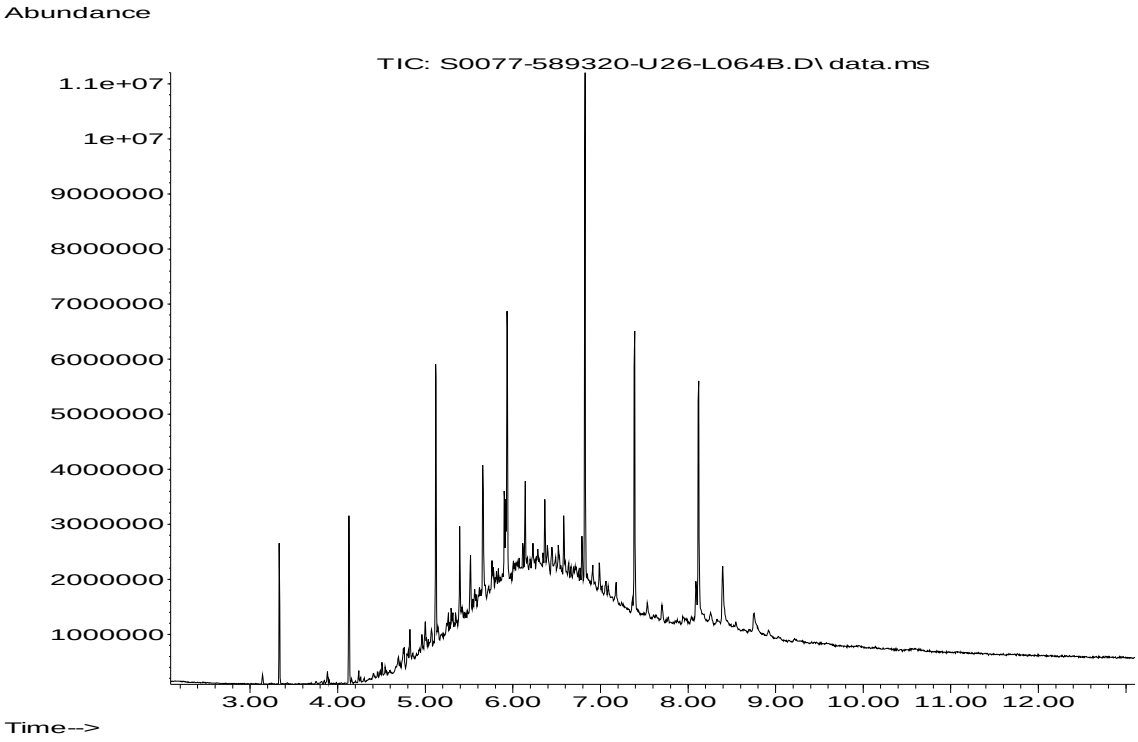

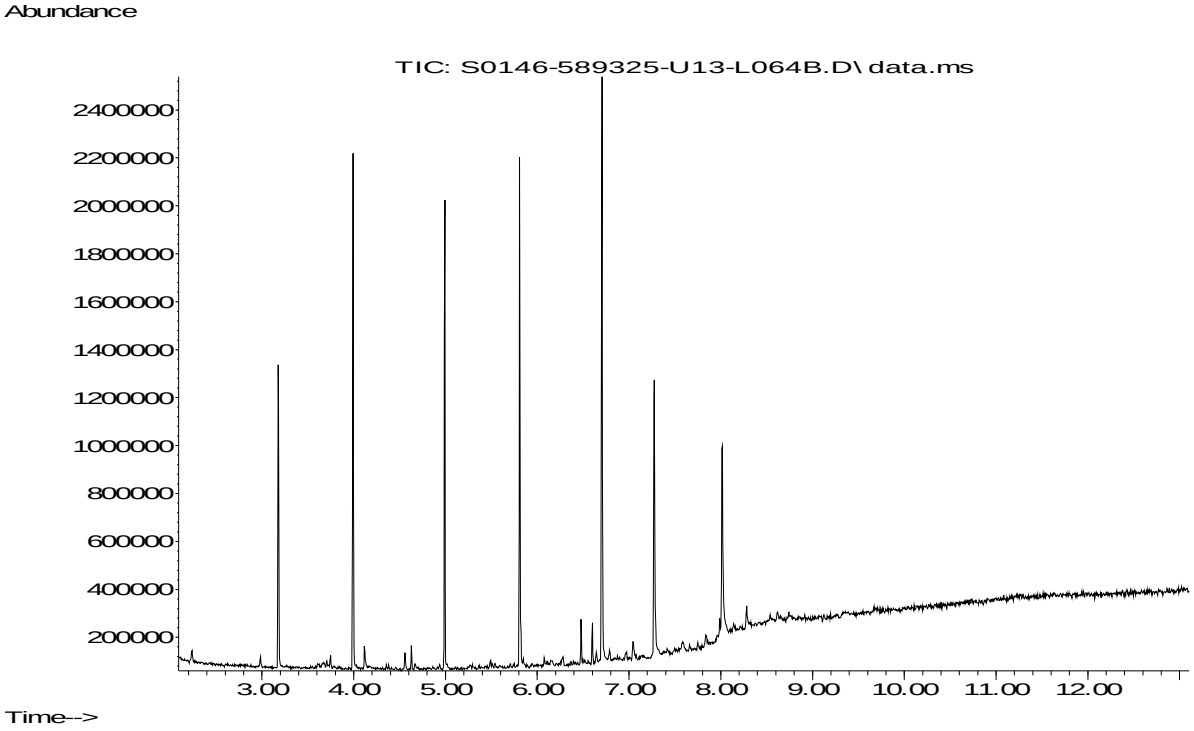

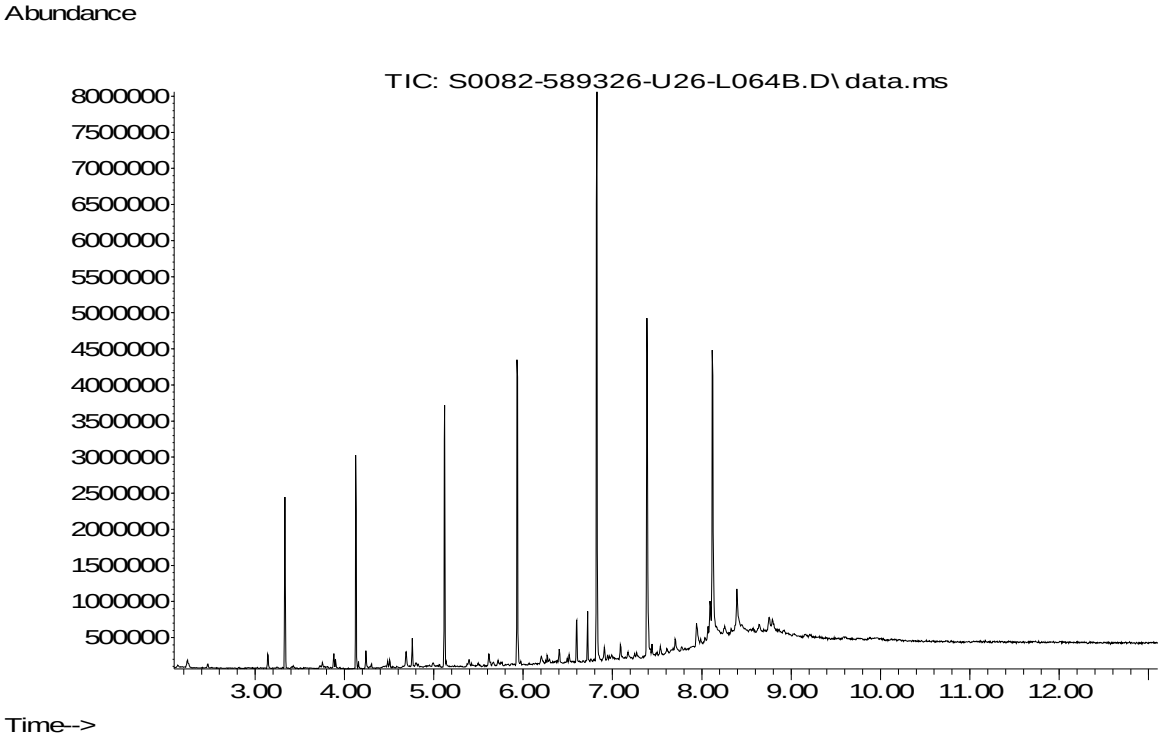

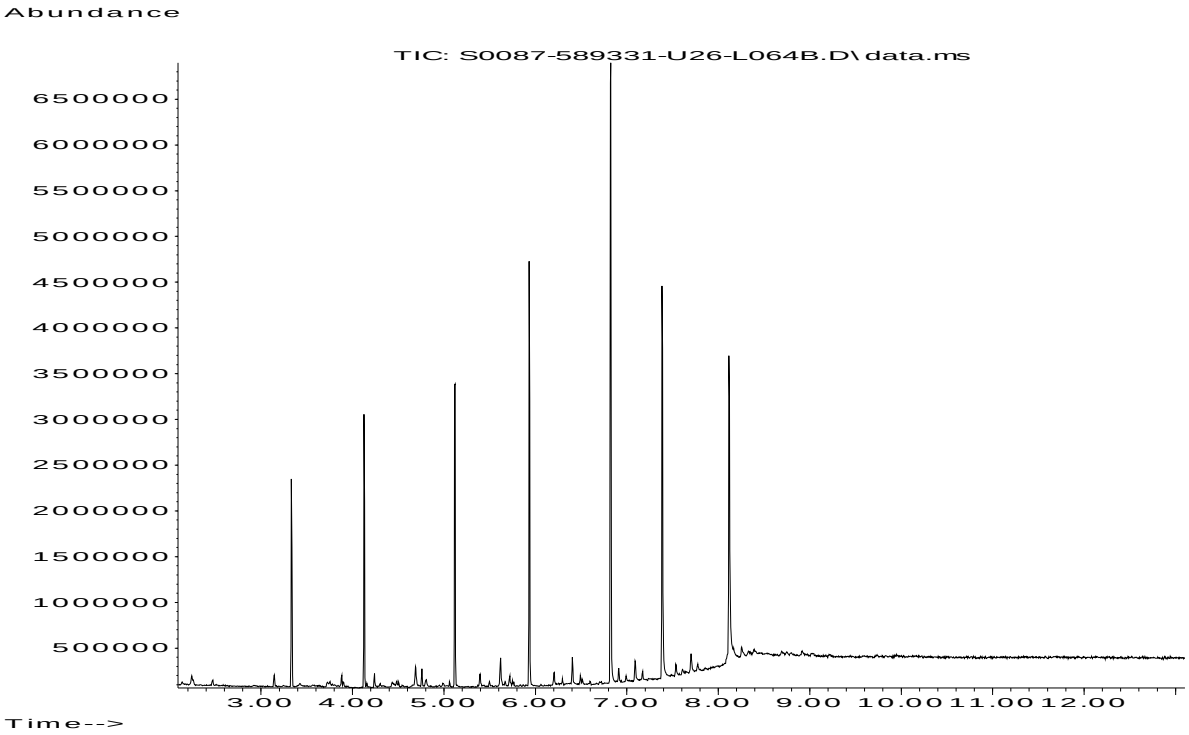

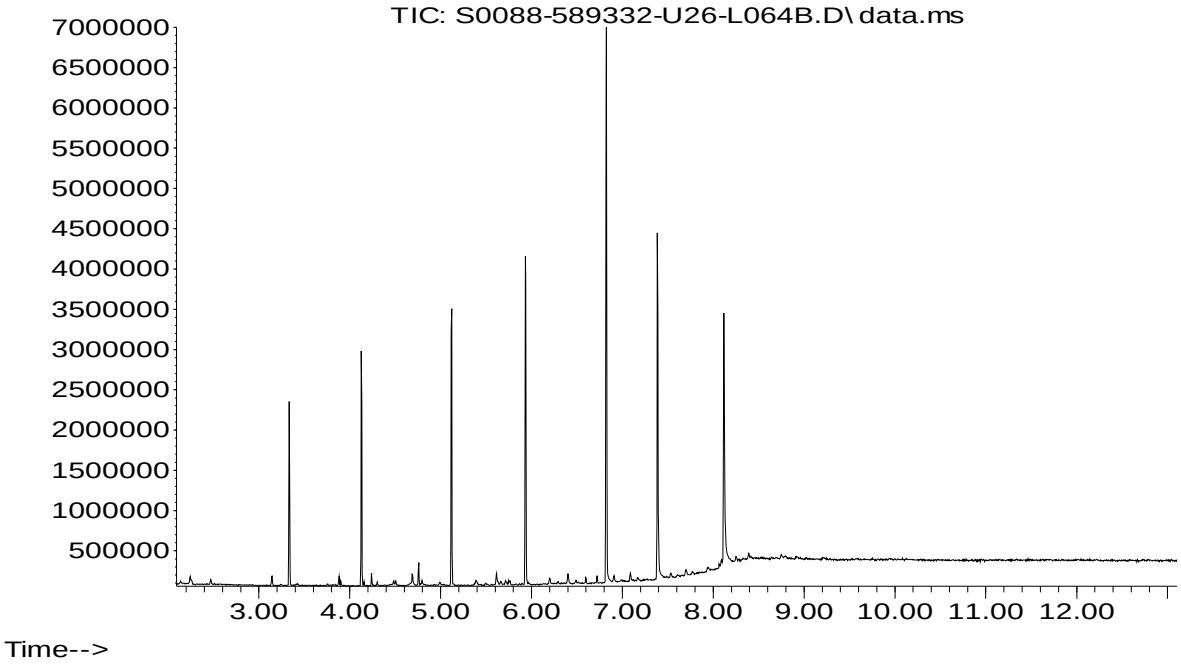

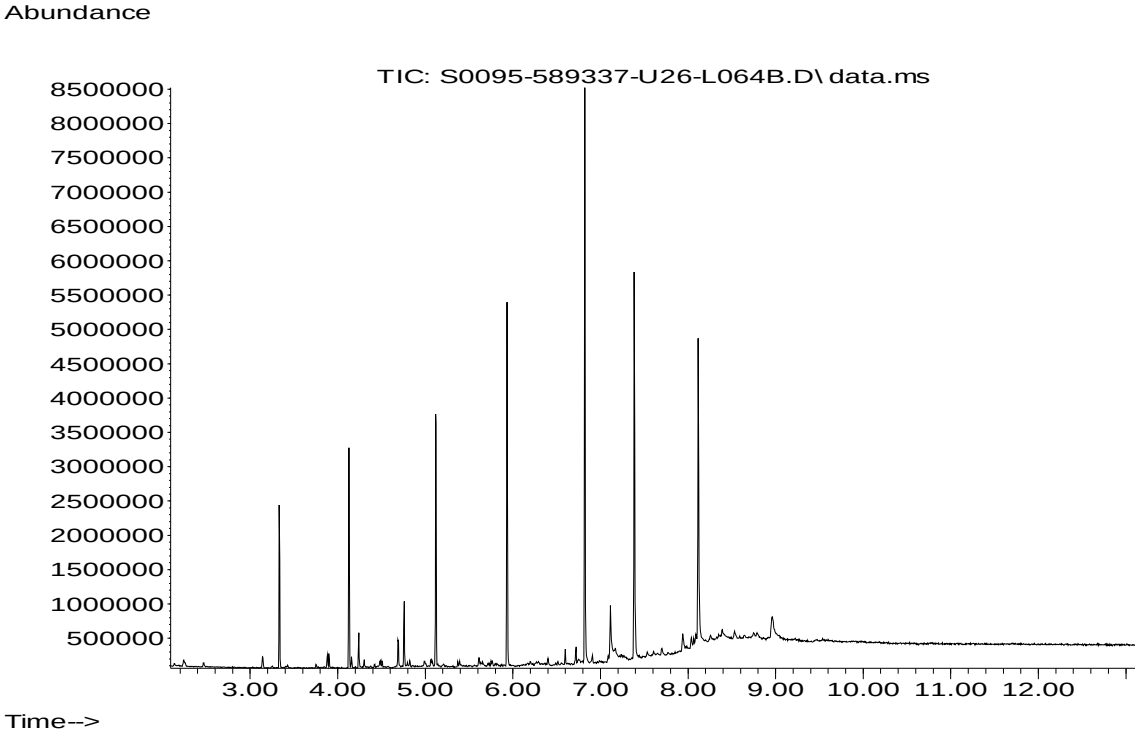

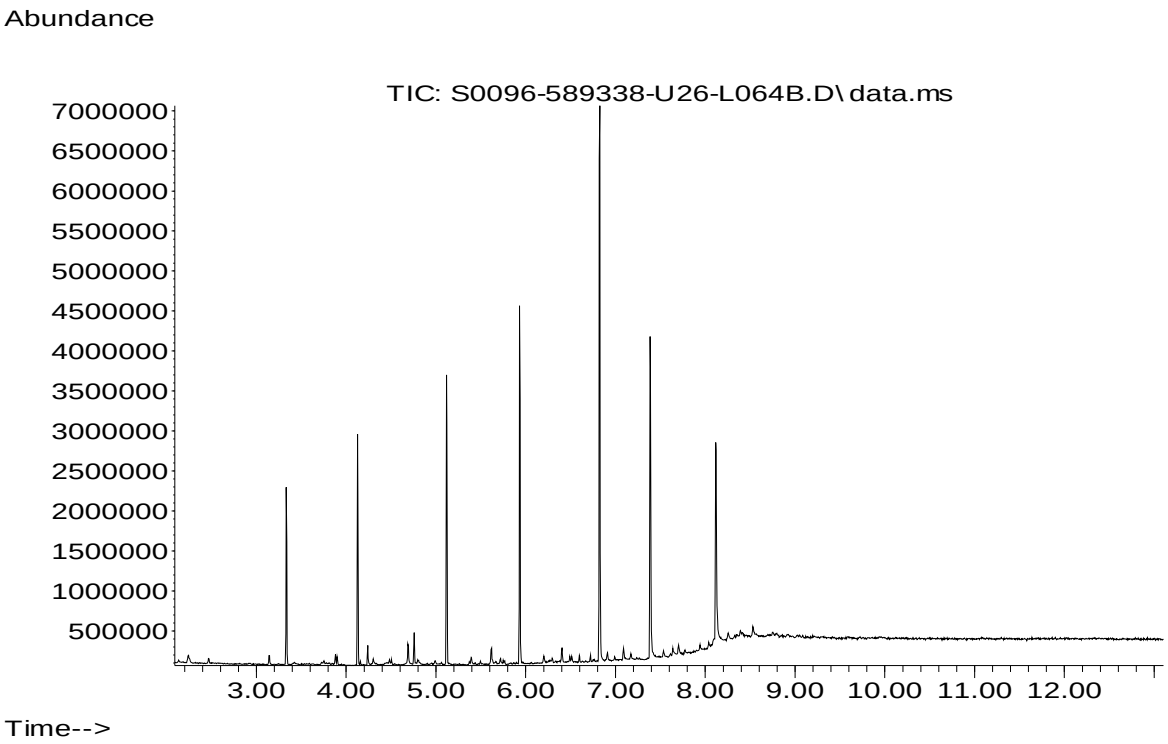

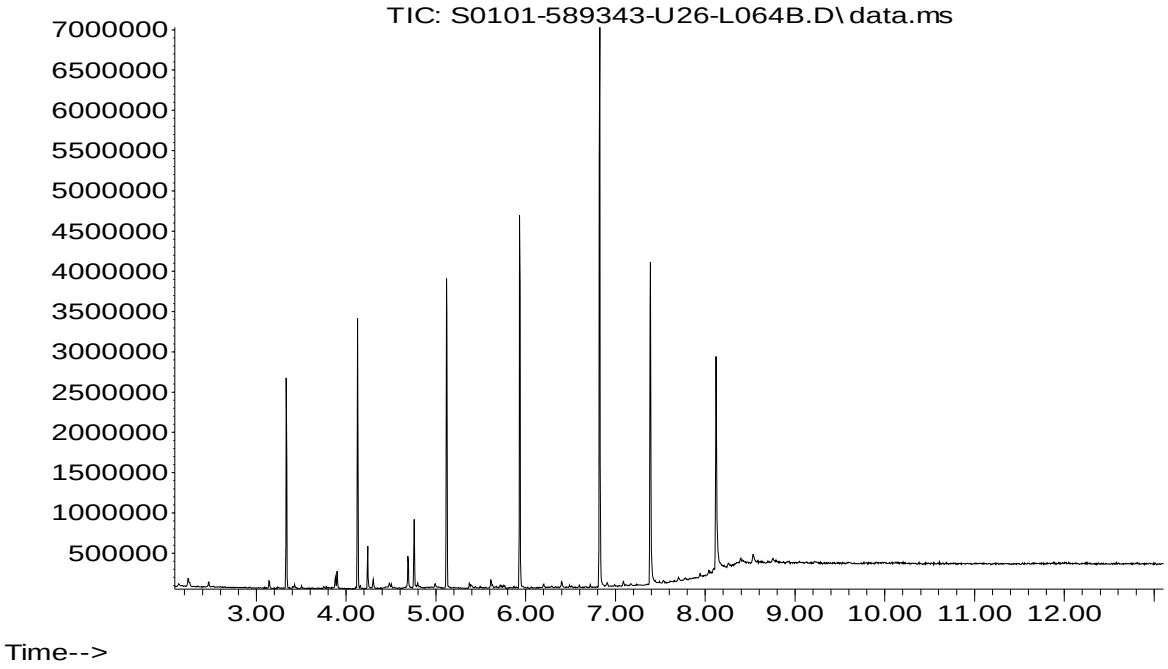

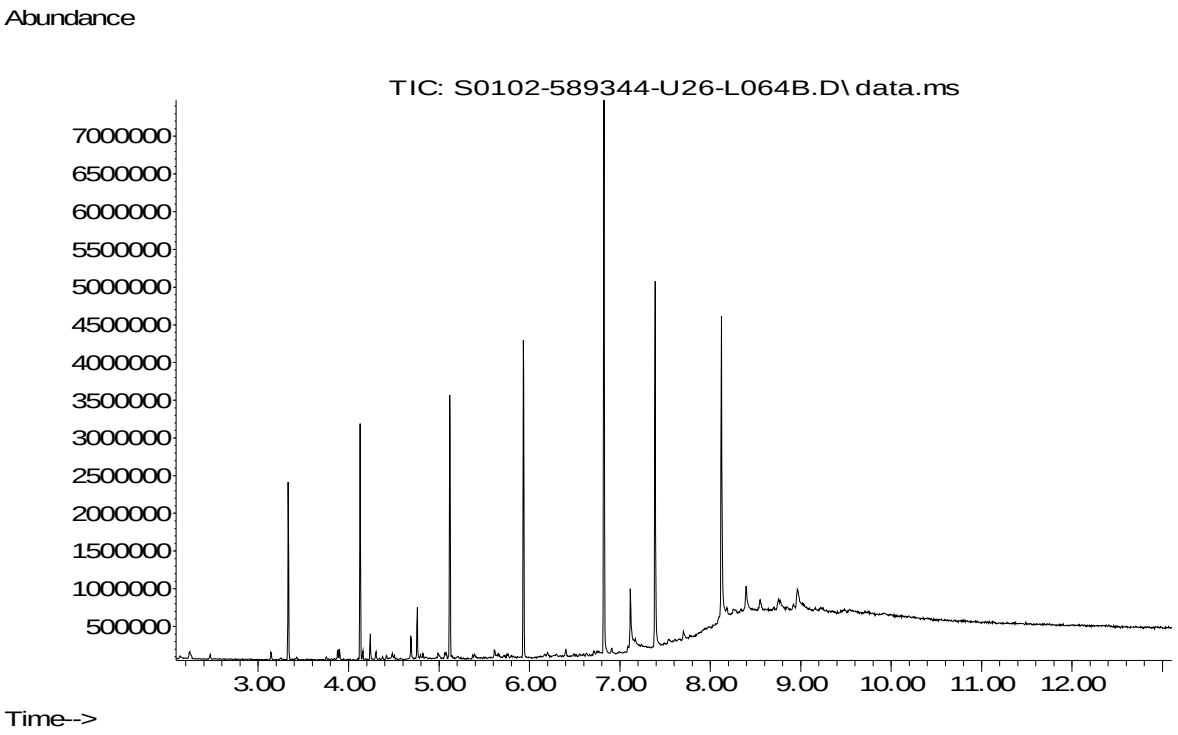

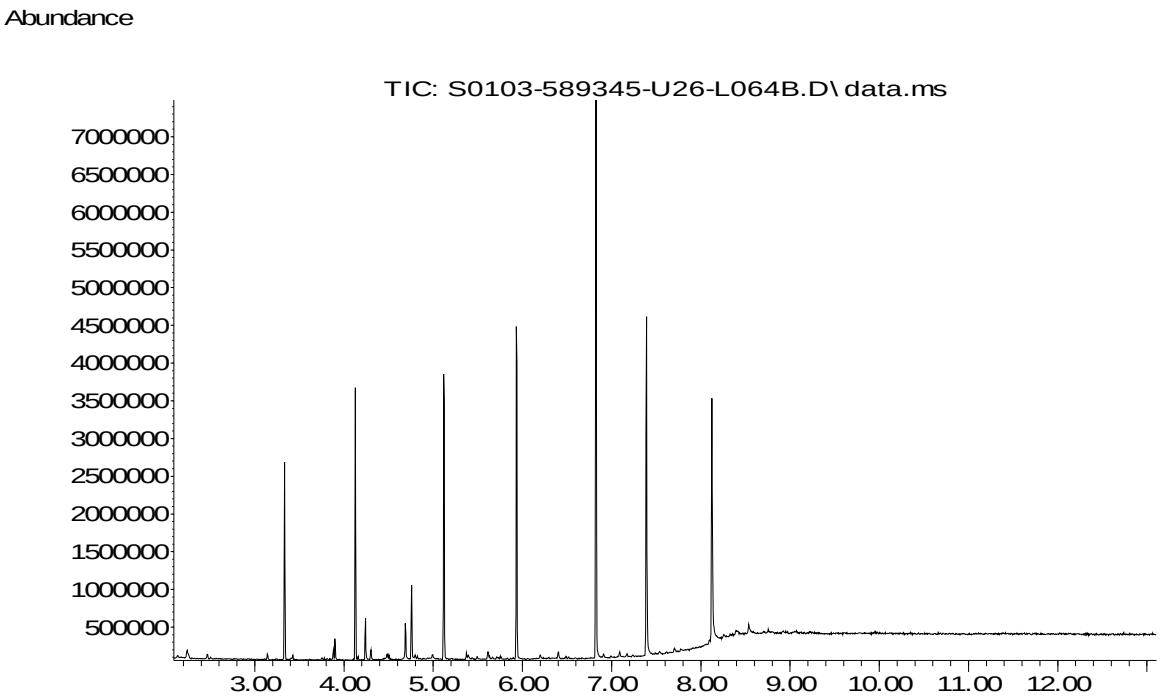

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Analytical Report Number : 16-20743

Project / Site name:	Kraft Phase 2	**Samples received on:**	21/06/2016
Your job number:	C161279	**Samples instructed on:**	22/06/2016
Your order number:	N9223-C161279	**Analysis completed by:**	29/06/2016
Report Issue Number:	1	**Report issued on:**	29/06/2016
Samples Analysed:	12 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 16-20743

Project / Site name: Kraft Phase 2
Your Order No: N9223-C161279

Lab Sample Number				591011	591012	591013	591014	591015
Sample Reference				WS03	WS03	WS05	WS07	WS12
Sample Number				D	D	D	D	D
Depth (m)				2.60	4.00-4.45	2.20	3.50	1.00-1.45
Date Sampled				07/06/2016	07/06/2016	08/06/2016	08/06/2016	03/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	22	17	21	22	16
Total mass of sample received	kg	0.001	NONE	0.52	0.19	0.18	0.17	0.44
General Inorganics								
pH	pH Units	N/A	MCERTS	7.5	7.9	7.4	7.5	7.7
Total Sulphate as SO_4	mg/kg	50	MCERTS	200	990	160	150	580
Total Sulphate as SO_4	%	0.005	MCERTS	0.020	0.099	0.016	0.015	0.058
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.029	0.28	0.0092	0.0064	0.036
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	28.9	280	9.2	6.4	35.5
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	24	41	26	12	12
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	12	21	13	5.9	6.2
Total Sulphur	mg/kg	50	NONE	88	1200	54	64	270
Total Sulphur	%	0.005	NONE	0.009	0.122	0.005	0.006	0.027
Ammonium as NH_4	mg/kg	0.5	MCERTS	< 0.5	0.6	< 0.5	< 0.5	9.0
Ammonium as NH_4 (leachate equivalent)	mg/l	0.05	MCERTS	< 0.1	0.3	< 0.1	< 0.1	4.5
Water Soluble Nitrate (2:1) as NO_3	mg/kg	2	NONE	< 2.0	< 2.0	3.0	5.0	< 2.0
Water Soluble Nitrate (2:1) as NO_3 (leachate equivalent	mg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Heavy Metals / Metalloids								
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	29	5.3	< 5.0	6.1
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	15	2.6	< 2.5	3.0

Analytical Report Number: 16-20743

Project / Site name: Kraft Phase 2
Your Order No: N9223-C161279

Lab Sample Number				591016	591017	591018	591019	591020
Sample Reference				WS13	WS15	WS25	WS19	WS22
Sample Number				D	D	D	D	D
Depth (m)				2.10	1.00-1.45	4.00-4.45	1.50	2.00-2.45
Date Sampled				02/06/2016	06/06/2016	06/06/2016	09/06/2016	06/06/2016
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	23	16	13	20	20
Total mass of sample received	kg	0.001	NONE	0.48	0.19	0.18	0.15	0.17
General Inorganics								
pH	pH Units	N/A	MCERTS	6.8	7.4	4.9	7.4	5.9
Total Sulphate as SO_4	mg/kg	50	MCERTS	780	180	1600	440	4200
Total Sulphate as SO_4	%	0.005	MCERTS	0.078	0.018	0.165	0.044	0.415
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.051	0.042	0.39	0.024	0.028
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	50.9	42.4	394	24.0	27.9
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	11	13	19	85	21
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	5.5	6.3	9.4	43	11
Total Sulphur	mg/kg	50	NONE	410	400	1500	220	1500
Total Sulphur	%	0.005	NONE	0.041	0.040	0.152	0.022	0.155
Ammonium as NH_4	mg/kg	0.5	MCERTS	33	< 0.5	1.6	< 0.5	< 0.5
Ammonium as NH_4 (leachate equivalent)	mg/l	0.05	MCERTS	17	< 0.1	0.8	< 0.1	< 0.1
Water Soluble Nitrate (2:1) as NO_3	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	6.2	< 2.0
Water Soluble Nitrate (2:1) as NO_3 (leachate equivalent	mg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Heavy Metals / Metalloids								
Magnesium (water soluble)	mg/kg	5	NONE	7.8	5.6	56	8.8	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	3.9	2.8	28	4.4	< 2.5

Analytical Report Number: 16-20743

Project / Site name: Kraft Phase 2
Your Order No: N9223-C161279

Lab Sample Number				591021	591022			
Sample Reference				BH02	BH04			
Sample Number				B	B			
Depth (m)				3.20-3.70	1.20			
Date Sampled				31/05/2016	06/06/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	11	17			
Total mass of sample received	kg	0.001	NONE	0.17	2.0			
General Inorganics								
pH	pH Units	N/A	MCERTS	7.9	7.4			
Total Sulphate as SO_4	mg/kg	50	MCERTS	240	480			
Total Sulphate as SO_4	%	0.005	MCERTS	0.024	0.048			
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.017	0.023			
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	16.9	22.5			
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	8.1	16			
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	4.1	7.9			
Total Sulphur	mg/kg	50	NONE	81	210			
Total Sulphur	%	0.005	NONE	0.008	0.021			
Ammonium as NH_4	mg/kg	0.5	MCERTS	< 0.5	8.3			
Ammonium as NH_4 (leachate equivalent)	mg/l	0.05	MCERTS	< 0.1	4.1			
Water Soluble Nitrate (2:1) as NO_3	mg/kg	2	NONE	< 2.0	< 2.0			
Water Soluble Nitrate (2:1) as NO_3 (leachate equivalent	mg/l	5	NONE	< 5.0	< 5.0			
Heavy Metals / Metalloids								
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	< 5.0			
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	< 2.5			

Analytical Report Number : 16-20743

Project / Site name: Kraft Phase 2

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
591011	WS03	D	2.60	Light brown clay and sand.
591012	WS03	D	4.00-4.45	Grey clay and sand.
591013	WS05	D	2.20	Light brown clay and sand.
591014	WS07	D	3.50	Light brown clay and sand.
591015	WS12	D	1.00-1.45	Light brown clay and sand.
591016	WS13	D	2.10	Grey clay and sand.
591017	WS15	D	1.00-1.45	Grey clay and sand.
591018	WS25	D	4.00-4.45	Grey clay and sand.
591019	WS19	D	1.50	Grey clay and loam.
591020	WS22	D	2.00-2.45	Grey clay and sand.
591021	BH02	B	3.20-3.70	Grey sandy clay.
591022	BH04	B	1.20	Brown loam and clay.

Analytical Report Number : 16-20743

Project / Site name: Kraft Phase 2

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests. 2:1 extraction.	L082-PL	D	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Nitrate, water soluble, in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated								Soil Type	RTD	RTD	AL	AL	RTD	TS	RTD	CHM	RTD	CHM	TS	RTD	TS	RTD
								Location & Depth	BH03	BH03	BH04	BH04	WS05	WS07	WS07	WS09	WS15	WS16	WS20	WS21	WS21	WS26
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.6**	**1**	**0.6**	**1.1**	**0.5**	**0.1**	**0.4**	**1.1**	**0.6**	**0.7**	**0.25**	**0.7**	**0.3**	**0.5**
Arsenic	1	14	14	120	0	640	67.17929	POTENTIALLY SUITABLE FOR USE	36	32	23	18	26	45	39	23	120	14	42	39	41	20
Beryllium	0.06	14	1	3.5	0	390	2.18984	POTENTIALLY SUITABLE FOR USE	1.3	1.2	1.1	1.3	1.3	1.4	1.2	1.2	3.5	1.4	1.6	1.6	1.6	1
Boron	0.2	14	0.6	3.1	0	190000	1.879485	POTENTIALLY SUITABLE FOR USE	1.3	1.1	3.1	1.3	1.2	0.7	0.6	1	0.6	1.2	1.1	1	1.1	1.2
Cadmium	0.2	14	0.2	0.2	0	220	0.2	POTENTIALLY SUITABLE FOR USE	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Chromium (III)	1	14	37	170	0	8400	99.93113	POTENTIALLY SUITABLE FOR USE	63	61	59	41	50	55	37	52	170	46	65	66	59	50
Chromium (VI)	1.2	14	1.2	1.2	0	33	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	14	1	41	0	69000	26.27617	POTENTIALLY SUITABLE FOR USE	25	9.4	41	10	7.8	10	5.9	18	1	24	13	18	9	9.2
Lead	2	14	8	81	0	2330	62.85697	POTENTIALLY SUITABLE FOR USE	73	32	72	14	24	81	31	10	8	14	40	37	29	22
Mercury, inorganic	0.3	14	0.3	0.5	0	3600	0.42252	POTENTIALLY SUITABLE FOR USE	0.3	0.3	0.3	0.3	0.4	0.5	0.3	0.3	0.3	0.5	0.3	0.3	0.3	0.3
Nickel	2	14	24	69	0	1700	55.88921	POTENTIALLY SUITABLE FOR USE	35	36	29	32	38	31	25	55	69	64	42	40	39	24
Selenium	1	14	1	1.9	0	13000	1.351048	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1.9	1	1	1	1	1.1
Vanadium	1	14	69	340	0	9000	185.3643	POTENTIALLY SUITABLE FOR USE	98	83	88	70	93	94	70	74	340	69	110	93	110	76
Zinc	2	14	59	120	0	670000	115.4472	POTENTIALLY SUITABLE FOR USE	92	89	98	75	84	97	65	100	110	120	110	110	110	59
Cyanide (free)	1	14	1	1	0	16000	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Phenol (total)	2	14	1	1	0	760	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Acenaphthene	0.05	14	0.1	1	0	84000	0.492499	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.51	1	0.1	0.1	0.1	0.1
Acenaphthylene	0.05	14	0.1	0.1	0	83000	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Anthracene	0.05	14	0.1	2.2	0	520000	0.912097	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.2	0.24	0.1	0.1	0.1	0.1
Benz(a)anthracene	0.05	14	0.1	14	0	86	5.449262	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.39	14	0.12	0.1	0.34	0.1	0.1
Benzo(a)pyrene	0.05	14	0.1	9.9	0	14	3.868154	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.34	9.9	0.1	0.1	0.18	0.1	0.1
Benzo(b)fluoranthene	0.05	14	0.1	11	0	97	4.293982	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	11	0.1	0.1	0.21	0.1	0.1
Benzo(ghi)perylene	0.05	14	0.05	7.3	0	630	2.825714	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	7.3	0.05	0.05	0.05	0.05	0.05
Benzo(k)fluoranthene	0.05	14	0.1	11	0	140	4.288049	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	11	0.1	0.1	0.2	0.1	0.1
Chrysene	0.05	14	0.05	14	0	140	5.416467	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.36	14	0.05	0.05	0.25	0.05	0.05
Dibenz(a,h)anthracene	0.05	14	0.1	1.7	0	12	0.712571	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.7	0.1	0.1	0.1	0.1	0.1
Fluoranthene	0.05	14	0.1	31	0	23000	12.01599	POTENTIALLY SUITABLE FOR USE	0.1	0.49	0.1	0.1	0.1	0.1	0.1	0.71	31	0.42	0.1	0.52	0.1	0.1
Fluorene	0.05	14	0.1	0.9	0	63000	0.421129	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.28	0.9	0.1	0.1	0.1	0.1
Indeno(1,2,3,cd)pyrene	0.05	14	0.1	6.4	0	58	2.512	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.4	0.1	0.1	0.1	0.1	0.1
Naphthalene	0.05	14	0.05	0.05	0	190	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.05	14	0.1	8	0	22000	3.320366	POTENTIALLY SUITABLE FOR USE	0.1	0.39	0.1	0.1	0.1	0.1	0.1	0.1	8	2.1	0.1	0.29	0.1	0.1
Pyrene	0.05	14	0.1	22	0	54000	8.545799	POTENTIALLY SUITABLE FOR USE	0.1	0.38	0.1	0.1	0.1	0.1	0.1	0.55	22	0.27	0.1	0.44	0.1	0.1
Asbestos identified	Y/N								N	N	N	N	N	N	N	N	N	N	N	N	N	N
FOC (dimensionless)	0.009443	**(mean)**							0.012	0.0059	0.024	0.0027	0.0062	0.011	0.0049	0.011	0.0029	0.013	0.013	0.011	0.01	0.0046
SOM (calculated)	1.63%	**(mean)**							2.07%	1.02%	4.14%	0.47%	1.07%	1.90%	0.84%	1.90%	0.50%	2.24%	2.24%	1.90%	1.72%	0.79%
pH (su)	7.9	**(mean)**							8.2	8	7.4	8.3	8	7.4	7.8	8.1	8.3	7.5	7.3	8	8	7.8

Risk parameter: Human health - commercial (1%SOM)
Data set: Natural
Client: DB Symmetry Limited
Site: Kraft Phase 2
Job no.: C161279
Lab. report no(s).: 16-20400

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated								Soil Type	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
								Location & Depth	BH02	BH02	WS01	WS01	WS03	WS03	WS04	WS13	WS13	WS18	WS19	WS26
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.10**	**0.50**	**0.40**	**1.00**	**0.20**	**0.60**	**0.30**	**0.30**	**0.60**	**0.30**	**0.30**	**0.20**
Benzene	0.01	12	0.001	0.001	0	27	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Toluene	0.01	12	0.001	0.001	0	870	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Ethylbenzene	0.01	12	0.001	0.001	0	520	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Xylene, o-	0.01	12	0.001	0.001	0	480	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Xylene, m- & p-	0.01	12	0.001	0.001	0	580	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
MTBE	0.01	12	0.001	0.001	0	7500	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Iso-propylbenzene	0.01	0	0	0	0	390														
Propylbenzene	0.01	0	0	0	0	400														
1,2,4-Trimethylbenzene	0.01	0	0	0	0	39														
Bromobenzene	0.01	0	0	0	0	92														
Chlorobenzene	0.01	0	0	0	0	56														
1,2-Dichlorobenzene	0.01	0	0	0	0	570														
1,3-Dichlorobenzene	0.01	0	0	0	0	30														
1,4-Dichlorobenzene	0.01	0	0	0	0	230														
Hexachlorobenzene	0.01	0	0	0	0	0.2														
Pentachlorobenzene	0.01	0	0	0	0	640														
1,2,3-trichlorobenzene	0.01	0	0	0	0	100														
1,2,4-trichlorobenzene	0.01	0	0	0	0	220														
1,3,5-trichlorobenzene	0.01	0	0	0	0	23														
1,2,3,4-tetrachlorobenzene	0.01	0	0	0	0	120														
1,2,3,5-tetrachlorobenzene	0.01	0	0	0	0	39														
1,2,4,5-tetrachlorobenzene	0.01	0	0	0	0	20														

Risk parameter: Human health - commercial (1%SOM)
Data set: MG
Client: Db Symmetry Limited
Site: Kraft Phase 2
Job no.: C161279
Lab. report no(s).: 16-20400

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated								Soil Type	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
								Location & Depth	BH02	BH02	WS01	WS01	WS03	WS03	WS04	WS13	WS13	WS18	WS19	WS26
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.10**	**0.50**	**0.40**	**1.00**	**0.20**	**0.60**	**0.30**	**0.30**	**0.60**	**0.30**	**0.30**	**0.20**
Aliphatics EC5-EC6	0.01	12	0.1	0.1	0	300	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Aliphatics >EC6-EC8	0.01	12	0.1	0.1	0	140	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Aliphatics >EC8-EC10	0.01	12	0.1	0.1	0	78	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Aliphatics >EC10-EC12	0.01	12	1	1.8	0	48	1.412935	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1.4	1.8	1	1	1	1	1
Aliphatics >EC12-EC16	0.1	12	2	59	1	24	15.83011	POTENTIALLY SUITABLE FOR USE	6.2	2	2	2	2	5.2	59	2	2	2	2	2
Aliphatics >EC16-EC35	0.1	12	10	270	0	1000000	157.7845	POTENTIALLY SUITABLE FOR USE	46	10	10	20	10	270	180	10	10	10	10	40
Aliphatics >EC35-EC44	0.1	12	8.4	180	0	1000000	100.562	POTENTIALLY SUITABLE FOR USE	29	8.4	8.4	29	8.4	180	24	8.4	8.4	8.4	8.4	97
Aromatics EC5-EC7	0.01	12	0.1	0.1	0	1200	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Aromatics >EC7-EC8	0.01	12	0.1	0.1	0	870	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Aromatics >EC8-EC10	0.01	12	0.1	0.1	0	610	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Aromatics >EC10-EC12	0.01	12	1	1	0	360	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1
Aromatics >EC12-EC16	0.1	12	2	26	0	36000	13.74834	POTENTIALLY SUITABLE FOR USE	8.4	2	2	2	2	7	26	2	2	2	2	2
Aromatics >EC16-EC21	0.1	12	10	82	0	28000	57.16544	POTENTIALLY SUITABLE FOR USE	76	10	10	10	10	33	82	10	10	10	10	10
Aromatics >EC21-EC35	0.1	12	10	480	0	28000	252.778	POTENTIALLY SUITABLE FOR USE	210	39	10	44	10	480	65	10	10	10	10	45
Aromatics >EC35-EC44	0.1	12	8.4	470	0	28000	246.0016	POTENTIALLY SUITABLE FOR USE	120	31	8.4	60	8.4	470	20	8.4	8.4	8.4	8.4	170

ADDITIVITY CHECK		HAZARD QUOTIENTS FOR EACH FRACTION											
	Aliphatics EC5-EC6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Aliphatics >EC6-EC8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Considered additive	Aliphatics >EC8-EC10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Considered additive	Aliphatics >EC10-EC12	0.021	0.021	0.021	0.021	0.021	0.029	0.038	0.021	0.021	0.021	0.021	0.021
Considered additive	Aliphatics >EC12-EC16	0.258	0.083	0.083	0.083	0.083	0.217	2.458	0.083	0.083	0.083	0.083	0.083
	Aliphatics >EC16-EC35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Aliphatics >EC35-EC44	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Aromatics EC5-EC7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Aromatics >EC7-EC8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Considered additive	Aromatics >EC8-EC10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Considered additive	Aromatics >EC10-EC12	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Considered additive	Aromatics >EC12-EC16	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
	Aromatics >EC16-EC21	0.003	0.000	0.000	0.000	0.000	0.001	0.003	0.000	0.000	0.000	0.000	0.000
Considered additive	Aromatics >EC21-EC35	0.008	0.001	0.000	0.002	0.000	0.017	0.002	0.000	0.000	0.000	0.000	0.002
	Aromatics >EC35-EC44	0.004	0.001	0.000	0.002	0.000	0.017	0.001	0.000	0.000	0.000	0.000	0.006
	Hazard Index for ali>C8-C16	**0.280**	**0.105**	**0.105**	**0.105**	**0.105**	**0.247**	**2.497**	**0.105**	**0.105**	**0.105**	**0.105**	**0.105**
	Hazard Index for aro>C8-C16	**0.003**	**0.003**	**0.003**	**0.003**	**0.003**	**0.003**	**0.004**	**0.003**	**0.003**	**0.003**	**0.003**	**0.003**
	Hazard Index for aro>C16-C35	**0.010**	**0.002**	**0.001**	**0.002**	**0.001**	**0.018**	**0.005**	**0.001**	**0.001**	**0.001**	**0.001**	**0.002**

Hazard Index table - HI or HQ greater than 1 highlighted with yellow shading.

Legend: Main table values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Main table alues in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Risk parameter: Human health - commercial (1%SOM)
Data set: MG
Client: Db Symmetry Limited
Site: Kraft Phase 2
Job no.: C161279
Lab. report no(s).: 16-20400

Assessment of Chemicals of Potential Concern to Plant Life

Hydrock

All values in mg/kg unless otherwise stated																				
								Soil Type	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
								Location & Depth	BH01	BH01	BH02	BH02	WS01	WS01	WS03	WS03	WS04	WS05	WS08	WS11	WS11	WS12	WS12
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.1**	**0.4**	**0.1**	**0.5**	**0.4**	**1**	**0.2**	**0.6**	**0.3**	**0.1**	**0.3**	**0.4**	**0.8**	**0.3**	**0.6**
Arsenic	1	23	6.9	190	0	250	110.3619	POTENTIALLY SUITABLE FOR USE	33	33	41	35	94	23	54	29	41	22	25	120	190	120	170
Boron	0.2	23	0.2	2.7	0	3	1.379209	POTENTIALLY SUITABLE FOR USE	1.5	0.8	0.7	0.9	0.6	0.3	1.3	1.3	1.3	0.9	0.5	0.7	0.6	0.6	0.7
Chromium (III)	1	23	3.8	330	0	400	172.5817	POTENTIALLY SUITABLE FOR USE	64	62	38	53	170	25	75	67	67	36	6	170	330	260	280
Chromium (VI)	1.2	23	1.2	1.2	0	25	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	23	1	17	0	135	10.25202	POTENTIALLY SUITABLE FOR USE	8.8	5.4	15	12	1	1	10	6.2	6.4	11	5.1	1	1	1	1
Nickel	2	23	4.8	130	5	75	81.58099	FURTHER ASSESSMENT REQUIRED	35	40	18	43	63	12	48	28	38	36	4.9	80	130	120	130
Zinc	2	23	11	230	0	300	153.7134	POTENTIALLY SUITABLE FOR USE	100	89	75	93	160	27	110	100	90	77	20	140	220	150	210
	Mean																						
pH (su)	8.5								7.9	8.3	8.3	8.4	8.2	8.8	8.2	8.5	8.4	8.6	8.5	8.3	8	8	8.2

Risk parameter: Plant life pH 7
Data set: Made Ground
Client: DB Symmetry Limited
Site: Kraft Phase 2
Job no.: C161279
Lab. report no(s).: 16-20400

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Plant Life

Hydrock

All values in mg/kg unless otherwise stated								Soil Type	MG	MG	MG	MG	MG	MG	MG	MG
								Location & Depth	WS13	WS13	WS15	WS16	WS18	WS23	WS23	WS26
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.3**	**0.6**	**0.3**	**0.3**	**0.3**	**0.2**	**0.7**	**0.2**
Arsenic	1	23	6.9	190	0	250	110.3619	POTENTIALLY SUITABLE FOR USE	23	54	6.9	25	37	33	170	8.4
Boron	0.2	23	0.2	2.7	0	3	1.379209	POTENTIALLY SUITABLE FOR USE	0.3	0.4	0.2	0.5	1.7	2.7	0.9	0.5
Chromium (III)	1	23	3.8	330	0	400	172.5817	POTENTIALLY SUITABLE FOR USE	11	78	3.8	42	50	39	120	11
Chromium (VI)	1.2	23	1.2	1.2	0	25	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	23	1	17	0	135	10.25202	POTENTIALLY SUITABLE FOR USE	8	1	11	1	17	1	1	3.4
Nickel	2	23	4.8	130	5	75	81.58099	FURTHER ASSESSMENT REQUIRED	13	30	4.8	22	32	23	98	7
Zinc	2	23	11	230	0	300	153.7134	POTENTIALLY SUITABLE FOR USE	28	57	11	39	90	53	230	19
	Mean															
pH (su)	8.5								8.5	8.2	8.7	8.6	8.1	10.2	8.6	9

Risk parameter: **Plant life pH 7**
Data set: Made Ground
Client: DB Symmetry Limited
Site: Kraft Phase 2
Job no.: C161279
Lab. report no(s).: 16-20400

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated

Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US_{95}	Result of Significance Test	Soil Type	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
									Location & Depth	BH01	BH01	BH02	BH02	WS01	WS01	WS03	WS03	WS04	WS05	WS08	WS11	WS11	WS12	WS12
										0.1	0.4	0.1	0.5	0.4	1	0.2	0.6	0.3	0.1	0.3	0.4	0.8	0.3	0.6
Arsenic	1	23	6.9	190	0	640	110.3619	POTENTIALLY SUITABLE FOR USE		33	33	41	35	94	23	54	29	41	22	25	120	190	120	170
Beryllium	0.06	23	0.12	6.1	0	390	3.332359	POTENTIALLY SUITABLE FOR USE		1.4	1.5	0.84	1.4	3	0.42	1.5	1.2	1.4	1.2	0.12	3.3	6.1	4.5	4.9
Boron	0.2	23	0.2	2.7	0	190000	1.379209	POTENTIALLY SUITABLE FOR USE		1.5	0.8	0.7	0.9	0.6	0.3	1.3	1.3	1.3	0.9	0.5	0.7	0.6	0.6	0.7
Cadmium	0.2	23	0.2	0.2	0	220	0.2	POTENTIALLY SUITABLE FOR USE		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Chromium (III)	1	23	3.8	330	0	8400	172.5817	POTENTIALLY SUITABLE FOR USE		64	62	38	53	170	25	75	67	67	36	6	170	330	260	280
Chromium (VI)	1.2	23	1.2	1.2	0	33	1.2	POTENTIALLY SUITABLE FOR USE		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	23	1	17	0	69000	10.25202	POTENTIALLY SUITABLE FOR USE		8.8	5.4	15	12	1	1	10	6.2	6.4	11	5.1	1	1	1	1
Lead	2	23	2.7	81	0	2330	36.66603	POTENTIALLY SUITABLE FOR USE		52	34	28	23	8.7	9.1	34	39	25	15	4.6	9.4	10	6.7	7.7
Mercury, inorganic	0.3	23	0.3	0.3	0	3600	0.3	POTENTIALLY SUITABLE FOR USE		0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Nickel	2	23	4.8	130	0	1700	81.58099	POTENTIALLY SUITABLE FOR USE		35	40	18	43	63	12	48	28	38	36	4.9	80	130	120	130
Selenium	1	23	1	2.7	0	13000	1.78568	POTENTIALLY SUITABLE FOR USE		1.7	1	1	1.2	1	1	1.8	1	1.2	1	1	1	2.4	1.3	2.3
Vanadium	1	23	20	680	0	9000	338.2421	POTENTIALLY SUITABLE FOR USE		87	98	71	92	270	50	150	100	100	69	20	350	680	480	600
Zinc	2	23	11	230	0	670000	153.7134	POTENTIALLY SUITABLE FOR USE		100	89	75	93	160	27	110	100	90	77	20	140	220	150	210
Cyanide (free)	1	23	1	1	0	16000	1	POTENTIALLY SUITABLE FOR USE		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Phenol (total)	2	23	1	1	0	760	1	POTENTIALLY SUITABLE FOR USE		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Acenaphthene	0.05	23	0.1	0.67	0	84000	0.232835	POTENTIALLY SUITABLE FOR USE		0.1	0.1	0.67	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Acenaphthylene	0.05	23	0.1	0.1	0	83000	0.1	POTENTIALLY SUITABLE FOR USE		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Anthracene	0.05	23	0.1	1.4	0	520000	0.411342	POTENTIALLY SUITABLE FOR USE		0.1	0.1	1.4	0.12	0.21	0.1	0.1	0.15	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Benz(a)anthracene	0.05	23	0.1	6.6	0	86	1.810295	POTENTIALLY SUITABLE FOR USE		0.1	0.1	6.6	0.79	1.3	0.1	0.1	1.4	0.1	0.1	0.25	0.1	0.1	0.1	0.1
Benzo(a)pyrene	0.05	23	0.1	5.1	0	14	1.895671	POTENTIALLY SUITABLE FOR USE		0.1	0.1	5	0.8	0.76	0.1	0.1	5.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Benzo(b)fluoranthene	0.05	23	0.1	7.7	0	97	2.41864	POTENTIALLY SUITABLE FOR USE		0.1	0.1	7.7	1.2	1.2	0.1	0.1	4.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Benzo(ghi)perylene	0.05	23	0.05	5.5	0	630	1.660019	POTENTIALLY SUITABLE FOR USE		0.05	0.05	3.4	0.52	0.6	0.05	0.05	5.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Benzo(k)fluoranthene	0.05	23	0.1	2.9	0	140	1.108083	POTENTIALLY SUITABLE FOR USE		0.1	0.1	2.9	0.44	1.1	0.1	0.1	2.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Chrysene	0.05	23	0.05	5	0	140	1.428604	POTENTIALLY SUITABLE FOR USE		0.05	0.05	5	0.7	1.3	0.05	0.05	1.5	0.05	0.05	0.2	0.05	0.05	0.05	0.05
Dibenz(a,h)anthracene	0.05	23	0.1	0.77	0	12	0.33201	POTENTIALLY SUITABLE FOR USE		0.1	0.1	0.76	0.1	0.1	0.1	0.1	0.77	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fluoranthene	0.05	23	0.1	11	0	23000	2.974213	POTENTIALLY SUITABLE FOR USE		0.1	0.1	11	1.2	2.7	0.1	0.1	1.3	0.1	0.1	0.51	0.1	0.1	0.1	0.1
Fluorene	0.05	23	0.1	0.76	0	63000	0.253809	POTENTIALLY SUITABLE FOR USE		0.1	0.1	0.76	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Indeno(1,2,3,cd)pyrene	0.05	23	0.1	3.2	0	58	1.208948	POTENTIALLY SUITABLE FOR USE		0.1	0.1	3.2	0.41	0.5	0.1	0.1	3.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Naphthalene	0.05	23	0.05	0.05	0	190	0.05	POTENTIALLY SUITABLE FOR USE		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.05	23	0.1	6	0	22000	1.591926	POTENTIALLY SUITABLE FOR USE		0.1	0.1	6	0.53	1.2	0.1	0.1	0.32	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Pyrene	0.05	23	0.1	8.6	0	54000	2.33085	POTENTIALLY SUITABLE FOR USE		0.1	0.1	8.6	0.93	1.9	0.1	0.1	1.3	0.1	0.1	0.39	0.1	0.1	0.1	0.1
Asbestos identified	Y/N									N	N	N	Y	N	N	N	Y	N	N	N	N	N	N	N
FOC (dimensionless)	0.005413	**(mean)**								0.023	0.0042	0.015	0.0056	0.0021	0.001	0.011	0.016	0.0074	0.0072	0.001	0.0017	0.0017	0.001	0.0018
SOM (calculated)	0.93%	**(mean)**								3.97%	0.72%	2.59%	0.97%	0.36%	0.17%	1.90%	2.76%	1.28%	1.24%	0.17%	0.29%	0.29%	0.17%	0.31%
pH (su)	8.5	**(mean)**								7.9	8.3	8.3	8.4	8.2	8.8	8.2	8.5	8.4	8.6	8.5	8.3	8	8	8.2

Risk parameter: Human health - commercial (1%SOM)
Data set: Made Ground
Client: DB Symmetry Limited
Site: Kraft Phase 2
Job no.: C161279
Lab. report no(s).: 16-20400

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated								Soil Type	MG	MG	MG	MG	MG	MG	MG	MG
								Location & Depth	WS13	WS13	WS15	WS16	WS18	WS23	WS23	WS26
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.3**	**0.6**	**0.3**	**0.3**	**0.3**	**0.2**	**0.7**	**0.2**
Arsenic	1	23	6.9	190	0	640	110.3619	POTENTIALLY SUITABLE FOR USE	23	54	6.9	25	37	33	170	8.4
Beryllium	0.06	23	0.12	6.1	0	390	3.332359	POTENTIALLY SUITABLE FOR USE	0.33	1.3	0.12	0.77	1.4	1.4	3.9	0.31
Boron	0.2	23	0.2	2.7	0	190000	1.379209	POTENTIALLY SUITABLE FOR USE	0.3	0.4	0.2	0.5	1.7	2.7	0.9	0.5
Cadmium	0.2	23	0.2	0.2	0	220	0.2	POTENTIALLY SUITABLE FOR USE	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Chromium (III)	1	23	3.8	330	0	8400	172.5817	POTENTIALLY SUITABLE FOR USE	11	78	3.8	42	50	39	120	11
Chromium (VI)	1.2	23	1.2	1.2	0	33	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	23	1	17	0	69000	10.25202	POTENTIALLY SUITABLE FOR USE	8	1	11	1	17	1	1	3.4
Lead	2	23	2.7	81	0	2330	36.66603	POTENTIALLY SUITABLE FOR USE	5.5	5.2	2.7	4.9	81	14	23	6.5
Mercury, inorganic	0.3	23	0.3	0.3	0	3600	0.3	POTENTIALLY SUITABLE FOR USE	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Nickel	2	23	4.8	130	0	1700	81.58099	POTENTIALLY SUITABLE FOR USE	13	30	4.8	22	32	23	98	7
Selenium	1	23	1	2.7	0	13000	1.78568	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1.6	2.7	1
Vanadium	1	23	20	680	0	9000	338.2421	POTENTIALLY SUITABLE FOR USE	34	130	23	78	95	84	220	20
Zinc	2	23	11	230	0	670000	153.7134	POTENTIALLY SUITABLE FOR USE	28	57	11	39	90	53	230	19
Cyanide (free)	1	23	1	1	0	16000	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1
Phenol (total)	2	23	1	1	0	760	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1
Acenaphthene	0.05	23	0.1	0.67	0	84000	0.232835	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Acenaphthylene	0.05	23	0.1	0.1	0	83000	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Anthracene	0.05	23	0.1	1.4	0	520000	0.411342	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.13	0.1	0.1	0.1	0.1
Benz(a)anthracene	0.05	23	0.1	6.6	0	86	1.810295	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.34	0.5	0.1	0.36	0.1	0.1
Benzo(a)pyrene	0.05	23	0.1	5.1	0	14	1.895671	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.17	0.35	0.1	0.23	0.1	0.1
Benzo(b)fluoranthene	0.05	23	0.1	7.7	0	97	2.41864	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.24	0.6	0.1	0.39	0.1	0.1
Benzo(ghi)perylene	0.05	23	0.05	5.5	0	630	1.660019	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Benzo(k)fluoranthene	0.05	23	0.1	2.9	0	140	1.108083	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.22	0.24	0.1	0.25	0.1	0.1
Chrysene	0.05	23	0.05	5	0	140	1.428604	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.33	0.44	0.05	0.31	0.05	0.05
Dibenz(a,h)anthracene	0.05	23	0.1	0.77	0	12	0.33201	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fluoranthene	0.05	23	0.1	11	0	23000	2.974213	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.64	0.92	0.1	0.76	0.1	0.1
Fluorene	0.05	23	0.1	0.76	0	63000	0.253809	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Indeno(1,2,3,cd)pyrene	0.05	23	0.1	3.2	0	58	1.208948	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Naphthalene	0.05	23	0.05	0.05	0	190	0.05	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.05	23	0.1	6	0	22000	1.591926	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.21	0.65	0.1	0.32	0.1	0.1
Pyrene	0.05	23	0.1	8.6	0	54000	2.33085	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.48	0.67	0.1	0.59	0.1	0.1
Asbestos identified	Y/N								N	N	N	N	N	N	N	N
FOC (dimensionless)	0.005413	**(mean)**							0.001	0.0014	0.001	0.001	0.014	0.0016	0.0024	0.0024
SOM (calculated)	0.93%	**(mean)**							0.17%	0.24%	0.17%	0.17%	2.41%	0.28%	0.41%	0.41%
pH (su)	8.5	**(mean)**							8.5	8.2	8.7	8.6	8.1	10.2	8.6	9

Risk parameter: Human health - commercial (1%SOM)
Data set: Made Ground
Client: DB Symmetry Limited
Site: Kraft Phase 2
Job no.: C161279
Lab. report no(s).: 16-20400

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated								Soil Type	RTD	RTD	CHM	TS	RTD								
								Location & Depth	BH03	BH03	WS09	WS21	WS26								
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.60**	**1.00**	**1.10**	**0.30**	**0.50**								
Benzene	0.001	5	0.001	0.001	0	27	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001								
Toluene	0.001	5	0.001	0.001	0	870	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001								
Ethylbenzene	0.001	5	0.001	0.001	0	520	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001								
Xylene, o-	0.001	5	0.001	0.001	0	480	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001								
Xylene, m- & p-	0.001	5	0.001	0.001	0	580	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001								
MTBE	0.001	5	0.001	0.001	0	7500	0.001	POTENTIALLY SUITABLE FOR USE	0.001	0.001	0.001	0.001	0.001								
Iso-propylbenzene	0.01	0	0	0	0	390															
Propylbenzene	0.01	0	0	0	0	400															
1,2,4-Trimethylbenzene	0.01	0	0	0	0	39															
Bromobenzene	0.01	0	0	0	0	92															
Chlorobenzene	0.01	0	0	0	0	56															
1,2-Dichlorobenzene	0.01	0	0	0	0	570															
1,3-Dichlorobenzene	0.01	0	0	0	0	30															
1,4-Dichlorobenzene	0.01	0	0	0	0	230															
Hexachlorobenzene	0.01	0	0	0	0	0.2															
Pentachlorobenzene	0.01	0	0	0	0	640															
1,2,3-trichlorobenzene	0.01	0	0	0	0	100															
1,2,4-trichlorobenzene	0.01	0	0	0	0	220															
1,3,5-trichlorobenzene	0.01	0	0	0	0	23															
1,2,3,4-tetrachlorobenzene	0.01	0	0	0	0	120															
1,2,3,5-tetrachlorobenzene	0.01	0	0	0	0	39															
1,2,4,5-tetrachlorobenzene	0.01	0	0	0	0	20															

Risk parameter: Human health - commercial (1%SOM)
Data set: NAT
Client: Db Symmetry Limited
Site: Kraft Phase 2
Job no.: C161279
Lab. report no(s).: 16-20400

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated

Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US_{95}	Result of Significance Test	RTD BH03 0.60	RTD BH03 1.00	CHM WS09 1.10	TS WS21 0.30	RTD WS26 0.50
Aliphatics EC5-EC6	0.01	5	0.1	0.1	0	300	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1
Aliphatics >EC6-EC8	0.01	5	0.1	0.1	0	140	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1
Aliphatics >EC8-EC10	0.01	5	0.1	0.1	0	78	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1
Aliphatics >EC10-EC12	0.01	5	1	1	0	48	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1
Aliphatics >EC12-EC16	0.1	5	2	2	0	24	2	POTENTIALLY SUITABLE FOR USE	2	2	2	2	2
Aliphatics >EC16-EC35	0.1	5	10	10	0	1000000	10	POTENTIALLY SUITABLE FOR USE	10	10	10	10	10
Aliphatics >EC35-EC44	0.1	5	8.4	8.4	0	1000000	8.4	POTENTIALLY SUITABLE FOR USE	8.4	8.4	8.4	8.4	8.4
Aromatics EC5-EC7	0.01	5	0.1	0.1	0	1200	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1
Aromatics >EC7-EC8	0.01	5	0.1	0.1	0	870	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1
Aromatics >EC8-EC10	0.01	5	0.1	0.1	0	610	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1
Aromatics >EC10-EC12	0.01	5	1	1	0	360	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1
Aromatics >EC12-EC16	0.1	5	2	2	0	36000	2	POTENTIALLY SUITABLE FOR USE	2	2	2	2	2
Aromatics >EC16-EC21	0.1	5	10	10	0	28000	10	POTENTIALLY SUITABLE FOR USE	10	10	10	10	10
Aromatics >EC21-EC35	0.1	5	10	29	0	28000	30.368	POTENTIALLY SUITABLE FOR USE	10	10	29	10	10
Aromatics >EC35-EC44	0.1	5	8.4	64	0	28000	68.0032	POTENTIALLY SUITABLE FOR USE	8.4	8.4	64	8.4	8.4

ADDITIVITY CHECK		RTD BH03 0.60	RTD BH03 1.00	CHM WS09 1.10	TS WS21 0.30	RTD WS26 0.50
	HAZARD QUOTIENTS FOR EACH FRACTION					
	Aliphatics EC5-EC6	0.000	0.000	0.000	0.000	0.000
	Aliphatics >EC6-EC8	0.001	0.001	0.001	0.001	0.001
Considered additive	Aliphatics >EC8-EC10	0.001	0.001	0.001	0.001	0.001
Considered additive	Aliphatics >EC10-EC12	0.021	0.021	0.021	0.021	0.021
Considered additive	Aliphatics >EC12-EC16	0.083	0.083	0.083	0.083	0.083
	Aliphatics >EC16-EC35	0.000	0.000	0.000	0.000	0.000
	Aliphatics >EC35-EC44	0.000	0.000	0.000	0.000	0.000
	Aromatics EC5-EC7	0.000	0.000	0.000	0.000	0.000
	Aromatics >EC7-EC8	0.000	0.000	0.000	0.000	0.000
Considered additive	Aromatics >EC8-EC10	0.000	0.000	0.000	0.000	0.000
Considered additive	Aromatics >EC10-EC12	0.003	0.003	0.003	0.003	0.003
Considered additive	Aromatics >EC12-EC16	0.000	0.000	0.000	0.000	0.000
Considered additive	Aromatics >EC16-EC21	0.000	0.000	0.000	0.000	0.000
Considered additive	Aromatics >EC21-EC35	0.000	0.000	0.001	0.000	0.000
	Aromatics >EC35-EC44	0.000	0.000	0.002	0.000	0.000
	Hazard Index for ali>C8-C16	**0.105**	**0.105**	**0.105**	**0.105**	**0.105**
	Hazard Index for aro>C8-C16	**0.003**	**0.003**	**0.003**	**0.003**	**0.003**
	Hazard Index for aro>C16-C35	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**

Risk parameter: Human health - commercial (1%SOM)
Data set: NAT
Client: Db Symmetry Limited
Site: Kraft Phase 2
Job no.: C161279
Lab. report no(s).: 16-20400

Legend: Hazard Index table - HI or HQ greater than 1 highlighted with yellow shading.
Main table values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Main table alues in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Plant Life

Hydrock

All values in mg/kg unless otherwise stated								Soil Type	RTD	RTD	AL	AL	RTD	TS	RTD	CHM	RTD	CHM	TS	RTD	TS	RTD
								Location & Depth	BH03	BH03	BH04	BH04	WS05	WS07	WS07	WS09	WS15	WS16	WS20	WS21	WS21	WS26
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**US_{95}**	**Result of Significance Test**	**0.6**	**1**	**0.6**	**1.1**	**0.5**	**0.1**	**0.4**	**1.1**	**0.6**	**0.7**	**0.25**	**0.7**	**0.3**	**0.5**
Arsenic	1	14	14	120	0	250	67.17929	POTENTIALLY SUITABLE FOR USE	36	32	23	18	26	45	39	23	120	14	42	39	41	20
Boron	0.2	14	0.6	3.1	1	3	1.879485	POTENTIALLY SUITABLE FOR USE	1.3	1.1	3.1	1.3	1.2	0.7	0.6	1	0.6	1.2	1.1	1	1.1	1.2
Chromium (III)	1	14	37	170	0	400	99.93113	POTENTIALLY SUITABLE FOR USE	63	61	59	41	50	55	37	52	170	46	65	66	59	50
Chromium (VI)	1.2	14	1.2	1.2	0	25	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	1	14	1	41	0	135	26.27617	POTENTIALLY SUITABLE FOR USE	25	9.4	41	10	7.8	10	5.9	18	1	24	13	18	9	9.2
Nickel	2	14	24	69	0	75	55.88921	POTENTIALLY SUITABLE FOR USE	35	36	29	32	38	31	25	55	69	64	42	40	39	24
Zinc	2	14	59	120	0	300	115.4472	POTENTIALLY SUITABLE FOR USE	92	89	98	75	84	97	65	100	110	120	110	110	110	59
	Mean																					
pH (su)	7.9								8.2	8	7.4	8.3	8	7.4	7.8	8.1	8.3	7.5	7.3	8	8	7.8

Risk parameter: Plant life pH 7
Data set: Natural
Client: DB Symmetry Limited
Site: Kraft Phase 2
Job no.: C161279
Lab. report no(s).: 16-20400

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Scenario B - Summary of Remedial Targets Methodology

Hydrock

RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples

Water body receptor(s): Groundwater and surface water
Secondary receptor(s): Aquatic ecosystem
Data set: Groundwater
Client: DB Symmetry Ltd
Site: Kraft Phase 2
Job no: C161279

2008/105/EC Annex II: [P]= priority substance, [PH] = priority hazardous substances.

Chemicals of Potential Concern (concentrations in µg/l)	Summary of Sample Data					Value Being Compared to Target = Maximum Value	Water Quality Target (Exceeded if Red Text)		No. Samples Exceeding Water Quality Target		Notes
	No. of Samples	Limit of Detection	Minimum Value	Maximum Value	95-%ile Value		Inland Waters EQS		Inland Waters EQS		EQS compared to dissolved metals as an initial screen, with no adjustment for bioavailability or ABC.
Hardness as mg/l CaCO3	-	-	200	-	-	-	-				Used with some EQS.
Ag (dissolved)	5	0	0.05	0.05	0.05	0.05	0.05		0		
Al (dissolved)	5	0	5.6	878	776.6	878	n/a		0		
As (dissolved)	5	0	0.15	2.16	2.05	2.16	50		0		
B (dissolved)	0	0	0	0		0	2000		0		
Ba (dissolved)	5	0	5.8	65	62.2	65	n/a		0		
Cd (dissolved) [PH]	5	0	0.02	0.02	0.02	0.02	0.25		0		
Co (dissolved)	5	0	0.2	2.5	2.38	2.5	3		0		
Cr (VI) (dissolved)	5	0	5	5	5	5	3.4		5		
Cr (III) (dissolved)	5	0	1	2.6	2.28	2.6	4.7		0		
Cr (total) (dissolved)	5	0	0.2	2.6	2.26	2.6	n/a		0		
Cu (dissolved)	5	0	0.5	4.6	4.28	4.6	1		3		EQS based on bioavailable fraction.
Fe (dissolved)	0	0	0	0		0	1000		0		
Hg (dissolved) [PH]	0	0	0	0		0	0.07		0		
Mn (dissolved)	5	0	6.3	270	231.4	270	123		1		EQS based on bioavailable fraction.
Mo (dissolved)	5	0	1.1	7.9	7.1	7.9	n/a		0		
Na (dissolved)	0	0	0	0		0	n/a		0		
Ni (dissolved) [P]	5	0	1.5	8.2	7.72	8.2	4		2		EQS based on bioavailable fraction.
Pb (dissolved) [P]	5	0	0.2	0.6	0.54	0.6	1.2		0		EQS based on bioavailable fraction.
Sb (dissolved)	5	0	0.7	2.7	2.48	2.7	n/a		0		
Se (dissolved)	5	0	0.6	51	44.4	51	n/a		0		
Sn (dissolved)	5	0	0.2	0.45	0.448	0.45	25		0		
V (dissolved)	5	0	0.2	11	10.38	11	60		0		
Zn (dissolved)	5	0	0.5	6.2	5.16	6.2	10.9		0		EQS based on bioavailable fraction and is added to ambient background conc..
Cyanide (free)	5	0	10	10	10	10	1		5		
Cyanide (total)	5	0	10	10	10	10	n/a		0		
Ammonium (NH4+)	5	0	15	130	107	130	n/a		0		
Bromate (BrO3)	5	0	2	2	2	2	n/a		0		
Chloride (Cl-)	5	0	8800	220000	186200	220000	250000		0		
Fluoride (F-)	5	0	390	950	874	950	5000		0		
Nitrate (NO3-)	5	0	3140	9140	9012	9140	n/a		0		
Nitrite (NO2-)	5	0	31	320	306	320	n/a		0		
Sulfate (SO42-)	5	0	8700	110000	104900	110000	400000		0		
pH (min.) (su)	5	0	7.9	7.4	7.9	7.4	6.0		0		Max & Min interchanged to compare min. value.
pH (max.) (su)	5	0	7.4	7.9	7.9	7.9	9.0		0		

Scenario B - Summary of Remedial Targets Methodology

Hydrock

RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples

Water body receptor(s): Groundwater and surface water
Secondary receptor(s): Aquatic ecosystem
Data set: Groundwater
Client: DB Symmetry Ltd
Site: Kraft Phase 2
Job no: C161279

2008/105/EC Annex II: [P]= priority substance, [PH] = priority hazardous substances.

Chemicals of Potential Concern (concentrations in µg/l)	Summary of Sample Data					Value Being Compared to Target = Maximum Value	Water Quality Target (Exceeded if Red Text)		No. Samples Exceeding Water Quality Target		Notes
	No. of Samples	Limit of Detection	Minimum Value	Maximum Value	95-%ile Value		Inland Waters EQS		Inland Waters EQS		EQS compared to dissolved metals as an initial screen, with no adjustment for bioavailability or ABC.
Electrical conductivity (µS/cm)	5	0	530	1500	1400	1500	n/a		0		
Anthracene [PH]	0	0	0	0		0	0.1		0		
Benzo(a)pyrene [PH]	0	0	0	0		0	0.00017		0		
Fluoranthene [P]	0	0	0	0		0	0.0063		0		
Naphthalene [P]	0	0	0	0		0	2		0		
PAHs = sum of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene [PH]	5	0	0.02	0.02	0.02	0.02	n/a		0		
Phenol	5	0	0.5	0.5	0.5	0.5	7.7		0		

Appendix G

Waste Classification

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Analytical Report Number : 16-20403

Project / Site name:	Kraft Phase 2	**Samples received on:**	10/06/2016
Your job number:	C161279	**Samples instructed on:**	17/06/2016
Your order number:	N9203-C161279	**Analysis completed by:**	23/06/2016
Report Issue Number:	1	**Report issued on:**	23/06/2016
Samples Analysed:	4 wac multi samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Dr Irma Doyle
Senior Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Waste Acceptance Criteria Analytical Results

Report No:	**16-20403**						
					Client:	**HYDROCK**	
Location	**Kraft Phase 2**						
Lab Reference (Sample Number)	589361				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	31/05/2016				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH02						
Depth (m)	0.10						
Solid Waste Analysis							
TOC (%)**	1.5				3%	5%	6%
Loss on Ignition (%) **	5.4				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg)	69				500	--	--
Total PAH (WAC-17) (mg/kg)	65				100	--	--
pH (units)**	7.5				--	>6	--
Acid Neutralisation Capacity (mol / kg)	14				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.048	0.051		0.50	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0049	0.0038		0.039	0.5	10	70
Copper *	0.016	0.0066		0.080	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.0048	< 0.0030		< 0.020	0.5	10	30
Nickel *	0.0030	0.0026		0.026	0.4	10	40
Lead *	< 0.0050	< 0.0050		0.039	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	0.011	< 0.010		0.071	0.1	0.5	7
Zinc *	0.0024	0.0076		0.069	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	4000	25000
Fluoride	2.0	0.70		8.8	10	150	500
Sulphate *	12	2.4		37	1000	20000	50000
TDS	5100	260		9500	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	16	8.3		94	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.44						
Dry Matter (%)	84						
Moisture (%)	16						
Stage 1							
Volume Eluate L2 (litres)	0.32						
Filtered Eluate VE1 (litres)	0.25						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

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Waste Acceptance Criteria Analytical Results

Report No:	**16-20403**						
					Client:	**HYDROCK**	
Location	**Kraft Phase 2**						
Lab Reference (Sample Number)	589362				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	06/06/2016				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH04						
Depth (m)	0.60						
Solid Waste Analysis							
TOC (%)**	2.4				3%	5%	6%
Loss on Ignition (%) **	9.0				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 1.6				100	--	--
pH (units)**	7.5				--	>6	--
Acid Neutralisation Capacity (mol / kg)	3.7				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	0.016	< 0.010		0.051	0.5	2	25
Barium *	0.054	0.026		0.28	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.014	0.0041		0.049	0.5	10	70
Copper *	0.069	0.020		0.24	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.0096	< 0.0030		0.028	0.5	10	30
Nickel *	0.013	0.0043		0.051	0.4	10	40
Lead *	0.037	0.016		0.18	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.016	0.0064		0.073	4	50	200
Chloride *	30	< 4.0		62	800	4000	25000
Fluoride	0.96	0.46		5.0	10	150	500
Sulphate *	44	9.4		130	1000	20000	50000
TDS	110	70		740	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	83	17		230	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.54						
Dry Matter (%)	78						
Moisture (%)	22						
Stage 1							
Volume Eluate L2 (litres)	0.31						
Filtered Eluate VE1 (litres)	0.16						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

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Waste Acceptance Criteria Analytical Results

Report No:	**16-20403**						
					Client:	**HYDROCK**	
Location	**Kraft Phase 2**						
Lab Reference (Sample Number)	589363				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	08/06/2016				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS09						
Depth (m)	1.10						
Solid Waste Analysis							
TOC (%)**	1.1				3%	5%	6%
Loss on Ignition (%) **	3.6				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	3.1				100	--	--
pH (units)**	7.1				--	>6	--
Acid Neutralisation Capacity (mol / kg)	1.2				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.071	0.048		0.51	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0062	0.0012		0.019	0.5	10	70
Copper *	0.0074	< 0.0030		0.033	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.060	0.0070		0.14	0.5	10	30
Nickel *	0.021	0.012		0.13	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		0.023	0.06	0.7	5
Selenium *	0.026	< 0.010		0.11	0.1	0.5	7
Zinc *	0.0025	0.0025		0.025	4	50	200
Chloride *	25	13		140	800	4000	25000
Fluoride	3.1	0.76		11	10	150	500
Sulphate *	160	84		950	1000	20000	50000
TDS	140	80		880	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	5.0	4.1		42	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.55						
Dry Matter (%)	81						
Moisture (%)	19						
Stage 1							
Volume Eluate L2 (litres)	0.32						
Filtered Eluate VE1 (litres)	0.24						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
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Waste Acceptance Criteria Analytical Results

Report No:	**16-20403**						
					Client:	**HYDROCK**	
Location	**Kraft Phase 2**						
Lab Reference (Sample Number)	589364				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	03/06/2016				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS12						
Depth (m)	0.30						
Solid Waste Analysis							
TOC (%)**	< 0.1				3%	5%	6%
Loss on Ignition (%) **	7.4				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 1.6				100	--	--
pH (units)**	8.1				--	>6	--
Acid Neutralisation Capacity (mol / kg)	16				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.055	0.015		0.21	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0033	0.0054		0.051	0.5	10	70
Copper *	0.0057	< 0.0030		0.030	2	50	100
Mercury *	0.0019	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	< 0.0030	< 0.0030		< 0.020	0.5	10	30
Nickel *	0.0015	0.0018		0.017	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	0.011	< 0.010		0.075	0.1	0.5	7
Zinc *	0.0045	< 0.0010		< 0.020	4	50	200
Chloride *	5.6	< 4.0		< 15	800	4000	25000
Fluoride	1.6	0.78		9.0	10	150	500
Sulphate *	36	4.6		92	1000	20000	50000
TDS	120	80		860	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	10	3.5		44	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.0						
Dry Matter (%)	84						
Moisture (%)	16						
Stage 1							
Volume Eluate L2 (litres)	0.32						
Filtered Eluate VE1 (litres)	0.26						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

Analytical Report Number : 16-20403

Project / Site name: Kraft Phase 2

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
589361	BH02	None Supplied	0.10	Brown loam and clay with gravel.
589362	BH04	None Supplied	0.60	Brown loam and clay with gravel.
589363	WS09	None Supplied	1.10	Grey clay.
589364	WS12	None Supplied	0.30	Brown loam and sand with gravel.

Analytical Report Number : 16-20403

Project / Site name: Kraft Phase 2

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
Mineral Oil in Soil	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method based on USEPA 8270	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Seciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L031-PL	W	NONE
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS

Analytical Report Number : 16-20403

Project / Site name: Kraft Phase 2

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
BH02		M	16-20403	589361	c	BTEX (Sum of BTEX compounds) in soil	L073B-PL	c
BH02		M	16-20403	589361	c	BTEX in soil (Monoaromatics)	L073B-PL	c
BH02		M	16-20403	589361	c	Organic Matter (Raw data) in soil	L023-PL	c

Our Ref: 70038703/TA/Final

20 October 2017

CONFIDENTIAL

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Dear Sirs,

Subject: Re: Kraft, Southam Road, Banbury, Oxfordshire, OX16 2EP ("the site") – High Level Peer Review of Selected Third Party Information

WSP UK Ltd (WSP) was instructed by Paloma Capital LLP (the Client) to conduct a high level peer review of existing third party information, for the above referenced site. The peer review relates to environmental aspects of the site condition; primarily land contamination and flood risk considerations.

The information below has been provided for review by the Client; it should be noted however that WSP cannot warrant the work of others, and takes the following information as being true and representative. Geotechnical considerations are beyond the scope of this assessment.

- ***Flood Risk Assessment, Southam Road Retail Park, Banbury****, by Peter Brett Associates LLP on behalf of Kraft Foods UK Ltd and Barwood Developments Ltd, dated March 2012, Ref.*26004/005
- ***Ground Conditions Desk Study, Kraft Phase 2, Banbury****, by Hydrock on behalf of db symmetry* ***Limited****, dated April 2016,* Ref: R/161279/001, Final
- ***Ground Investigation, Kraft Phase 2, Banbury****, by Hydrock on behalf of db symmetry Limited, dated July 2016,* Ref: R/161279/002, Final

Based on information provided to WSP by the Client, it is understood that the site forms the disused southern part of the existing Kraft factory site. Furthermore, that the Client is considering the forwarding funding of the proposed commercial / industrial development of the site (although no specific development proposals have been provided), and ultimate purchase of the freehold interest of the Site which is subject to leasehold interests.

With high level reference to Cherwell (North Oxfordshire) District Council planning portal, the following notable planning application history relating to redevelopment of the subject site has been noted. Only one Condition (18) has been identified relating to potential ground contamination, associated with the most recent May 2015 application (provided below); which concerns unexpected ground contamination that might be identified during redevelopment i.e. no apparent requirement for a desk study, intrusive investigation and remediation strategy/plan as a precursor to development. Aside from standard conditions relating to implementation of appropriate surface and foul drainage associated with the proposed development in May 2015, no conditions relating to flood risk are noted.

- ***Conditionally Approved Planning Application Ref. 05/02370/F, Resubmission of 04/02201/F - Demolition of existing obsolete building and construction of new process building in same area; Kraft Foods UK Ltd Ruscote Avenue Banbury Oxon OX16 2QU, Dec 2005***

- ***Conditionally Approved Planning Application Ref. 15/00831/F, Proposed development of a new Waitrose food store with car parking and access arrangement onto Southam Road. Demolition of existing building; Land at Kraft Foods Southam Road Banbury, May 2015***

  Contaminated Land Condition 18 within associated Decision Notice:

  'If, during development, contamination is found to be present at the site then no further development (unless otherwise agreed in writing with the local planning authority) shall be carried out until the developer has submitted a remediation strategy to the local planning authority detailing how this unsuspected contamination shall be dealt with and obtained written approval from the Local Planning Authority. The remediation strategy shall be implemented as approved.

  Reason - To ensure that any unexpected contamination encountered during the developments is suitable assessed and dealt with, such that it does not pose an unacceptable risk to ground or surface water.'

SITE DESCRIPTION AND HISTORY

The site occupies an area of c.6.1 hectares and is located off the A361, Southam Road, Banbury. It is currently disused and comprises a warehouse (previously used as a storage area for Kraft), part of the existing Kraft factory (in the centre and north), with a lorry park and wash in the west, a large car park in the east, an electricity sub-station in the south-west, and grassed areas in the south and north-west (*see Figure 1*).

Bird Brook flows from the west to the east in the north-west corner of the site before being culverted (four pipes) below the warehouse, exiting on the eastern side of the warehouse (from two pipes) before flowing into the River Cherwell approximately 500m to the east. The site slopes slightly down from the west to the east with an approximate 4m drop from the car park to the warehouse.

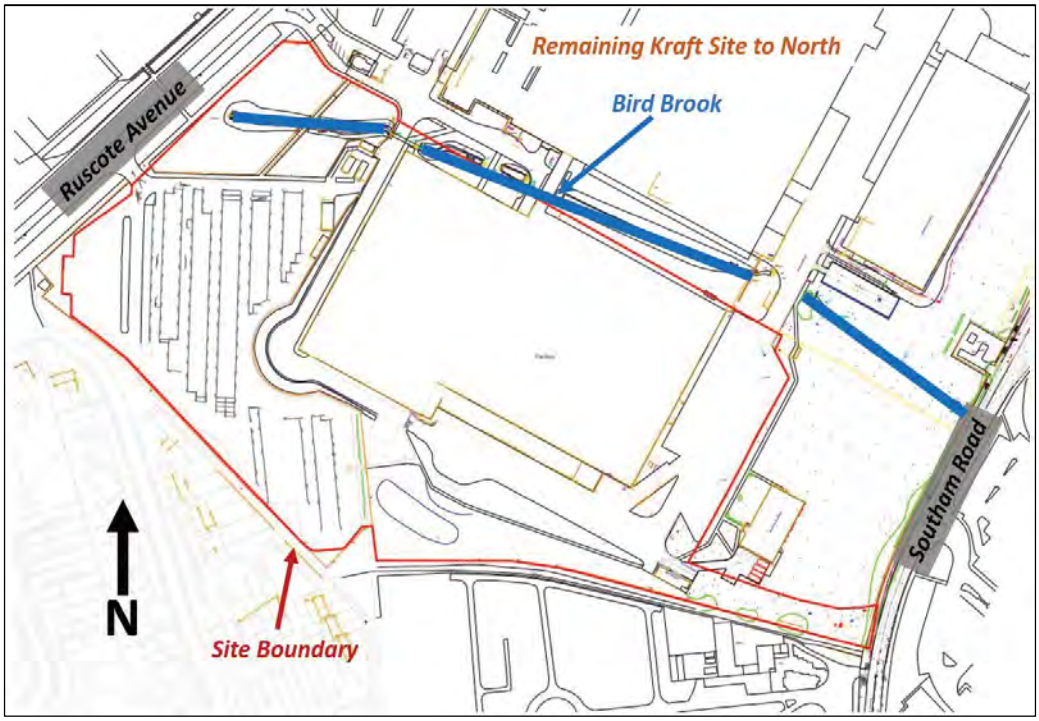


Figure 1 – Approximate Existing Site Layout

Historically, the site is reported to have been fields with Bird Brook in the north-west corner of the site from the earliest available mapping (1881). By 1965, an industrial building (food processing plant) was shown in the centre of the site (part of the larger Kraft factory extending off-site to the north), and a car park in the west by 1984.

The Hydrock desk study assessment identified the following potential key contaminant sources on-site:

- Polychlorinated biphenyls 'PCBs' associated with the electricity sub-station in the south-east of the site;
- Hydrocarbon fuels, lubricant and chlorinated solvents associated with the industrial building;
- Made Ground possibly including metals, metalloids, asbestos, polycyclic aromatic hydrocarbons 'PAHs' and petroleum hydrocarbons; and,
- Ground gases (carbon dioxide and methane) from alluvial soils.

Potential off-site sources of contamination were indicated to be tanks (unspecified) associated with the Kraft factory to the north of the site.

GEOLOGY, HYDROGEOLOGY AND HYDROLOGY

With reference to British Geological Society (BGS) Map Sheet 201, Banbury, the site is indicated to be underlain by Lower Lias Clay bedrock (now referred to as the 'Charmouth Mudstone Formation) which is indicated to comprise dark grey laminated shales and dark, pale and blueish grey mudstones with occasional limestone beds and local concretions, and exhibiting thickness in the order of 75m to 110m.

No superficial deposits are shown to be present on-site, although alluvium deposits (silty clay, with layers of silt, sand, peat and basal gravel) are indicated to be present immediately off-site to the east, beyond Southam Road, associated with the River Cherwell.

Four BGS historical borehole logs do however indicate superficial alluvium deposits (firm silty/sandy clay with rootlets and inclusions gravel, organic material, sand and becoming gravelly at depth) to 2.5m - 4.6m in the eastern site area, underlain by the Lower Lias Clay (very stiff fissured silty clay with occasional gravel).

The Alluvium and Charmouth Mudstone Formation are classed as a Secondary A and Secondary Undifferentiated aquifers, respectively. The site is not shown to lie within a groundwater Source Protection Zone (SPZ) as defined by the EA and there are no licensed abstractions (assumed groundwater and surface water) within 1km.

Bird Brook is present in the north-west of the site flowing west to east, and is culverted beneath the northern parts of the disused warehouse buildings on-site, ultimately discharging to the River Cherwell, approximately 500m to the east of the site. Hydrock reported that existing storm drainage on-site discharged directly into Bird Brook at numerous locations across the site.

The Oxford Canal runs north to south 300m east of the site.

CONTAMINATED LAND PEER REVIEW

NOTABLE DATABASE SEARCH FINDINGS

The following represents a summary of notable Hydrock desk study findings linked to the site:

- There is one discharge consent on-site and one 12m to the north, for trade discharges into Bird Brook.
- A non-specialist Unexploded Ordnance 'UXO' assessment indicated a low bomb risk and no further consideration of UXO is required on-site.
- Made Ground is anticipated locally on-site due to its current/former development.
- The site is in Flood Zone 1 (very low fluvial risk) – these are areas shown to be at less than a 0.1% chance of flooding in any year, or a 1:1000 year chance.
- The site is in a Radon Affected Area with recorded radon levels in 1%-3% of homes above the action level. Radon protection measures are not required for new buildings at this location.
- Based on historical land uses and its current operational use, the overall risk from land contamination at the site is considered to be low for the current development, and low to moderate for a redeveloped

site; though Hydrock indicated that this would need to be confirmed by appropriate intrusive investigation/assessment.

- It is considered unlikely that the site would be classified as Contaminated Land under Part 2A of the EPA 1990.

HYDROCK INTRUSIVE INVESTIGATION & FINDINGS

- The Hydrock ground investigation comprised the advancement of:
  - 4no. rotary cored boreholes (BH1-4) to a maximum depth of 20.14m below ground level (bgl);
  - 26no. window sample boreholes (WS1-26) to a maximum depth of 5.45m bgl (*see Figure 2*), of which 9no. of these boreholes (WS1, 3, 9, 13, 14, 18, 19, 25 & 26) were installed as ground gas and groundwater monitoring wells;
  - 6no. rounds of ground gas and groundwater monitoring; and,
  - Chemical analysis of soils and groundwater was also undertaken (discussed below).

Figure 2 – Hydrock Intrusive Exploratory Locations across Site

- Hydrock encountered the following ground conditions beneath the site:
  - **Made Ground** – to between 0.3m and 2.6m below ground level (bgl), comprising asphalt and/or concrete hardstanding upon clayey gravel of ironstone, sandstone, brick and concrete or gravelly clay;
  - **Alluvium** – to between 1.2 and 4.6m bgl, comprising sandy gravelly clay/silt with some rootlets and mild organic odour;
  - **River Terrace Deposits** – to between 0.90m and 8.0m bgl, comprising loose to medium dense sandy gravel, loose to medium dense gravelly sand or gravelly clay;
  - **Charmouth Mudstone Formation** - encountered underlying variously the Made Ground, Alluvium and River Terrace Deposits to a maximum proven depth of 20.14m bgl.
- Groundwater was generally encountered during intrusive investigations at the interface between the superficial deposits and the Charmouth Mudstone Formation. Groundwater was recorded post-

intrusive fieldwork at levels between 0.36m - 3.76m bgl. No discussion on groundwater flow directions was provided by Hydrock.

- 38no. soil samples (23no. from Made Ground; most within upper 1m of soil) were obtained from across site for a broad range of chemical analysis including a general inorganics suite, a suite of metals/metalloids, volatile organic compounds 'VOCs' including tentatively identified compounds 'TICs', BTEX[1] compounds, speciated[2] total petroleum hydrocarbons 'TPH', polychlorinated biphenyls 'PCBs', asbestos screening (and quantification if identified), and waste acceptance criteria 'WAC' testing.
- Hydrock screened soil results using generic assessment criteria (GAC) derived using the CLEA model under a commercial/industrial end use scenario. Given that there are no recognised GACs for lead, Category 4 Screening Levels (C4SL) were used. The screening exercise only revealed a single marginal petroleum hydrocarbons exceedance (aliphatics >EC12-EC16 59mg/kg vs GAC 24mg/kg) in WS03, 0.3m bgl, to the south-east of the site.
- Asbestos was identified in two of the thirty eight samples tested, both Made Ground, in BH02 (0.5m bgl; loose amosite fibres at <0.001%) in the north-east on the boundary line, and WS03 (0.6m bgl; chrysotile/amosite, hard cement type material, loose fibres and insulation lagging at 0.076%) in the south-east.
- 5no. groundwater samples (WS1, 9, 13, 18 & 26) were obtained for chemical analysis including a general inorganics suite, a suite of metals/metalloids, VOCs including TICs, BTEX compounds, phenols, PAHs and speciated TPH.
- For the purpose of initial controlled waters risk assessment, Hydrock considered that groundwater is present in the Alluvium and River Terrace Deposits beneath the site and is likely to provide base flow to Bird Brook. Furthermore, that Bird Brook flows into the River Cherwell 500m east of the site and the surface water abstraction is upstream of Bird Brook. Risks to groundwater and surface water from contaminants on-site were assessed according to the EA (2006) Remedial Targets Methodology (RTM), using relevant threshold values (Water Quality Targets (WQT)) which are linked to the conceptual site model. Acceptable WQT were defined for protection of human health (based on Drinking Water Standards (DWS)) and for protection of aquatic ecosystems (Environmental Quality Standards (EQS)).
- The risk screening assessment only identified marginal exceedances for copper (max 4.6µg/l vs. WQT of 1µg/l), manganese (max 270µg/l vs. WQT of 123µg/l) and nickel (max 8.2 µg/l and WQT 4µg/l). Levels of petroleum hydrocarbons and VOCs in groundwater beneath the site were all below analytical method detection limits.
- Six ground gas monitoring visits were undertaken on-site. Methane was not recorded above the detection limit of the analytical apparatus, and carbon dioxide recorded at typically less than 5%, although on one occasion was monitored at 5.4%. Atmospheric pressure ranged between 982mb and 1,005mb over the monitoring rounds. No ground gas flow rates were detected during monitoring.
- Hydrock stated that there was no relationship between elevated ground gas concentrations and low pressure, nor there a relationship between elevated ground gas concentrations and falling pressure.
- The risks associated with the ground gases were assessed using BS 8485:2015 and guidance from CIRIA Report 665 (Wilson et al 2007). In the calculation of a gas screening value (GSV), as no ground gas flow rates were recorded, Hydrock used the ground gas meters limit of detection (<0.1 l/hr) as the gas flow rate. The worst case GSV was calculated by Hydrock to be 0.0001 l/hr for methane and 0.0054 l/hr for carbon dioxide. Based on these GSVs the site was classified by Hydrock as Characteristic Situation 1 'CS1' (very low risk), where no ground gas protective measures are required in new building structures.
- Based on the investigation findings, the following conclusions/recommendations, all subject to agreement with regulators, were drawn by Hydrock:

[1] BTEX compounds – benzene, toluene, ethylbenzene and xylenes

[2] Speciated TPH – a total TPH concentration is separated out into its constitute bands of aliphatic and aromatic fractions, allowing for improved characterisation of the type of TPH present

- **Soil** – From a human health perspective, given the nature of the proposed commercial / industrial development with a predominance of building cover and hardstanding, Hydrock did not believe that soil contamination identified at the site, including asbestos locally, represented a significant risk to site users. It was indicated however, that appropriate clean cover would be required in limited soft landscaped areas, and appropriate materials management be implemented during the construction phase of the development to mitigate any risk to ground workers.
- **Controlled Waters** - as no elevated soil or groundwater contamination was identified, no indication of ongoing pollution of controlled waters, and conditions following site development expected to not be any worse than existing, controlled water liability were considered low.
- **Ground gas** - Low risk from ground gases and CS1 conditions apply. Based on the typically low ground gas concentrations and the lack of any relationship between elevated ground gas concentrations and pressure, Hydrock did not believe the site required upgrade to a higher ground gas classification.

- On the basis of the above, Hydrock considered that and no further soil, groundwater or ground gas assessment was likely required on-site.
- Hydrock proposed the following remedial strategy for redevelopment of the site, subject to relevant regulatory approval:
  - Protectaline pipework for potable water supplies – Hydrock considered that as the site was Brownfield, it was likely/or at least best practise, that a barrier pipe be used.
  - Capping of proposed soft landscaped areas with clean soil cover and appropriate materials handling and materials management. Hydrock indicated there to be suitable soils present on-site to be used as the cover system.

WSP OPINION – CONTAMINATED LAND

In the opinion of WSP, the Hydrock desktop and intrusive environmental assessment appear to have provided for a good understanding of the ground conditions beneath the subject site, in addition to the general environmental setting. This includes an appreciation of the type, extent and magnitude of soil and groundwater contamination present, the ground gas regime; in addition to the character of the underlying geology and hydrogeology, and key potential receptors.

WSP considers that the intrusive investigation has generally provided sufficient coverage of the subject site and applied an appropriate soil, groundwater and ground gas sampling and analysis strategy, based on potential historical activities (on and off-site), to target and characterise any residual contamination.

It is noted however, that with reference to a historical plan of the site (*see Figure 3*) identified by WSP on the Local Authority planning portal (associated with a previous site planning application), a fuel station ('DERV[3] lubricating oil') is shown in the central south of the site, that was not discussed or apparently targeted by Hydrock assessments or investigations.

Whilst the potential for hydrocarbon ground contamination in this area cannot be completely discounted, no hydrocarbon contamination that would suggest a significant fuel release to ground in this area was identified in a borehole (WS6) located in relatively close proximity, and also in two groundwater monitoring wells (WS1 & WS3) located c. 60m down hydraulic gradient (i.e. no groundwater hydrocarbon impacts).

At present, and until proven otherwise by the Vendor, the potential for underground diesel storage tanks (USTs) and associated infrastructure, in addition to hydrocarbon ground contamination in this area, cannot be discounted.

[3] 'DERV' – alternative historical name for diesel oil

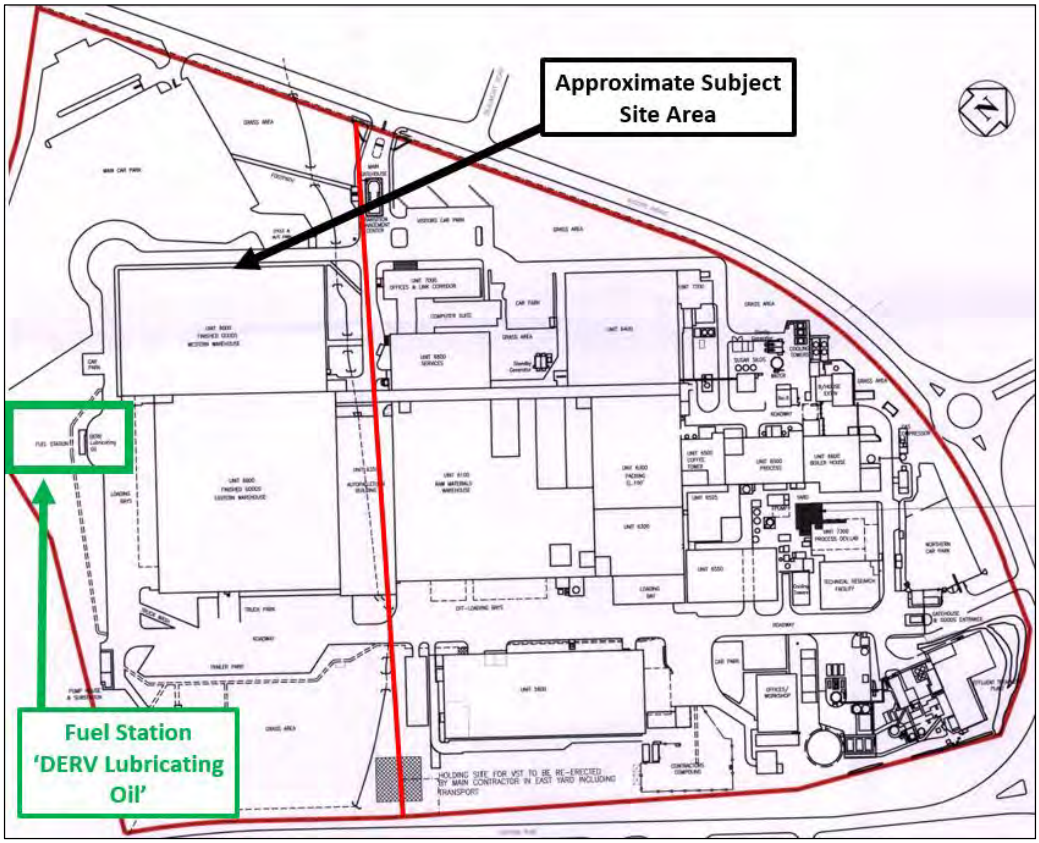


Figure 3 – Former Subject (and adjacent larger Kraft) Site Layout

Notwithstanding the uncertainty regarding the former fuel station area, limited potential contaminative activities have generally been associated with the site history and immediately surrounding area, and this appears to be consistent with an absence of specific contaminated land conditions attached to the planning decision notices for the previous proposed redevelopment of the site. However, WSP has not reviewed the planning application / decision notice (if available) for the most recent proposed commercial / industrial site redevelopment, and therefore the need for further contaminated land investigation as part this planning process cannot be discounted at this stage – certainly given the present uncertainty regarding the former fuel station area.

Soils

Intrusive investigations have, in contrast to the mapped geology, revealed the presence of superficial deposits across site. These deposits thicken towards the east coincident with the fall in the upper surface of the underlying Charmouth Mudstone bedrock. Made Ground also shows a marginal increase in thickness to the east, presumably to facilitate a development platform as part of the original construction of the existing buildings on-site due to fall in ground levels towards the River Cherwell.

Whilst Hydrock refers separately to the Alluvial and River Terrace deposits that form the superficial strata on-site, WSP considers the River Terrace deposits likely representative of an 'alluvial basal gravel' horizon described on geological mapping i.e. therefore both units likely form part of the same superficial 'Alluvium' deposits.

WSP has reviewed chemical soil results obtained as part of the Hydrock investigation against WSP in-house Human Health Generic Assessment Criteria (GACs), and are in general agreement that no results were detected in exceedance of GAC for a commercial / industrial end use. This is with the exception of some limited TPH results, marginally in exceedance of GAC, which WSP considers to represent relatively low concentrations. Asbestos has also been detected locally within Made Ground.

WSP concurs with Hydrock's view that it is unlikely that any risks to current or proposed site users would transpire based on the soil contamination identified beneath site given the assumed predominance of building cover and hardstanding across the current and proposed development, which should restrict exposure to any such contamination.

Groundwater

Limited discussion was provided by Hydrock on the likely groundwater flow regime beneath the site. With reference to groundwater levels provided by Hydrock and monitoring well casing elevations (allowing adjusted groundwater elevations to be calculated relative to the same reference datum), shallow groundwater flow appears to be eastward, towards the River Cherwell (as one would expect).

Given the apparent predominance of more clay dominated Alluvium in the western site area, there is expected to be a lesser degree of shallow groundwater interconnectivity in this area i.e. the groundwater levels observed here may be more representative of localised disconnected perched groundwater.

WSP considers the main groundwater flow horizon beneath the site to be the basal alluvial gravel horizon upon the lower permeability Charmouth Mudstone bedrock, or 'River Terrace deposits' as referred to by Hydrock. This gravel dominated horizon thickens to the east, and WSP agrees with Hydrock that this horizon likely provides base flow to the River Cherwell. There is also likely to be some degree of hydraulic connection between shallow groundwater on-site and the Bird Brook.

WSP has reviewed groundwater results obtained as part of the Hydrock investigation against relevant Environmental Quality Standards (UK Drinking Water Standards 'UK DWS' and UK Surface Water Standards 'UK SWS'), and concurs with the identified marginal exceedances of copper, manganese and nickel noted by Hydrock. Such concentrations, which may be associated with more diffuse type shallow groundwater conditions across the local area, are not considered to represent a significant risk to identified controlled water receptors. A predominance of building cover and hardstanding across the current and proposed development on-site will also restrict the infiltration of precipitation and mobilisation of any ground contamination (if present).

Ground Gas

WSP considers that the ground gas monitoring performed by Hydrock on-site generally adequate. However, WSP note that two of the monitoring wells in the west of the site (WS9 & WS25) had saturated screen intervals during the monitoring rounds, and therefore their ground gas results not representative of that within the unsaturated horizon.

However, the remaining seven monitoring wells still appear to provide relatively good site coverage and in particular provide ground gas results for the thicker Made Ground horizons in the east of the site (considered a key potential ground gas generating source).

WSP concurs with Hydrock that generally low ground gas concentrations were noted across site during monitoring and there was a lack of a relationship between the more elevated ground gas concentrations and atmospheric pressure. For these reasons, WSP agrees with Hydrock that the ground gas regime beneath the site is likely best characterised as a CS1 (very low risk), even though one marginally elevated carbon dioxide concentration was detected above the 5% v/v threshold (5.4% v/v WS9), that can tip a sites ground gas classification from a CS1 to CS2 (low risk).

On this basis, the need for ground gas protective measures in new building structures on-site as part of the proposed commercial / industrial development does not appear necessary.

CONCLUSIONS AND RECOMMENDATIONS – CONTAMINATED LAND

On the basis of the review of the Hydrock environmental reports provided by the Client, and with due regard to the proposed commercial / industrial use of the site with a predominance of building cover and hardstanding, WSP considers that the site represents a **low/medium** risk with respect to potential contaminated land liabilities. This risk rating assumes that appropriate (validated) clean cover fill will be incorporated into proposed unsurfaced landscaped areas of the site as part of its redevelopment, to

mitigate any potential human health exposure risks due to areas of localised soil contamination, if present (primarily linked to potential asbestos in soils).

The medium element of the risk rating principally relates to the uncertainty over the former fuel station area on-site and the potential for unrecognised refuelling infrastructure (including USTs) and hydrocarbon ground contamination, although a significant fuel release to ground in this area is not suggested by available Hydrock investigation findings.

On this basis, it is recommended that the Vendor be asked to provide any documentary evidence to confirm the absence/presence of such former refuelling infrastructure in this area, and if present, provision of appropriate decommissioning documentation.

Should such information not be available, consideration should be made towards the more targeted intrusive investigation of this former fuel station area on-site to reduce the uncertainty, whether as a precursor to, or during proposed site redevelopment construction phase. This will ensure any potential in ground structures and possible hydrocarbon contamination can be delineated and appropriately removed.

It is recommended that the Client seeks reliance on the Hydrock reports which form the basis of this peer review.

FLOOD RISK ASSESSMENT PEER REVIEW

PETER BRETT ASSOCIATES FLOOD RISK ASSESSMENT FRA OVERVIEW

- The 2012 Peter Brett Associates LLP (PBA) Flood Risk Assessment (FRA) was written in line with Planning Policy 25: Development and Flood Risk (PPS25) and was to accompany an outline planning application for a 5,574m^2 (60,000 sq ft) foodstore, petrol filling station and up to 7, 432m^2 (80,000 sq ft) of non-food retail and associated car parking.
- PBA states that the site is not at risk from tidal/coastal flooding, groundwater flooding, surface water flooding and foul water flooding but fluvial flood risk was considered further.
- PBA describe that the River Cherwell flows in a south easterly direction approximately 600m to the east of the site. The EA provided modelled flood levels from the Cherwell (Banbury) Flood Study (February 2011) and comparison of ground levels to modelled flood levels confirmed that there was a very low probability of flooding from the River Cherwell and that the site was located in Flood Zone 1.
- PBA describes that the Birds Brook, a tributary of the River Cherwell, flows in open and culverted sections through the north of the site. It is classed as a public sewer upstream and downstream of the site and is owned and maintained by Kraft within the site boundary. PBA estimates the maximum inflow to the western end of the Birds Brook to be 2.23m^3/s using the HR Wallingford hydraulic design tables (8th edition) and that the two stage channel capacity can accommodate a flow of greater than 10m^3/s. PBA concludes that there is a low probability of flooding at the site even taking into account a 20% increase in flows due to climate change.
- PBA state that there is no requirement to apply the Sequential Test or Exception Test.
- PBA confirms the development proposals include realignment and deculverting of some sections of the Birds Brook with the potential for some channel improvements. They also recommend minimum finished floor levels, a buffer zone and regular maintenance of the watercourse.
- PBA stated that infiltration drainage has not been considered as the site is located on unproductive strata and has a history of industrial and commercial use. Should site investigation indicate suitable conditions the drainage strategy could be revised.
- PBA stated that surface water runoff currently drains, unattenuated, to the Birds Brook.
- PBA's proposed drainage scheme is to continue to discharge into the Birds Brook, 3.2ha unattenuated and the remainder at the Greenfield runoff rate. Attenuation is to be provided to achieve this in shallow sub base replacement storage beneath the car park.
- PBA highlights long term management, exceedance and pollution control as requiring consideration.

- PBA concludes that the proposed development is appropriate for the site on the basis of flood risk. Furthermore, the suitable flood risk mitigation measures and a surface water management strategy be incorporated into the scheme to ensure that the proposed development does not result in an adverse impact elsewhere on the basis of flood risk.

WSP OPINION – FLOOD RISK ASSESSMENT

- WSP agrees with PBA that:
  - The site is located in Flood Zone 1 on the Environment Agency's Flood Map for Planning and access and egress should not be affected by fluvial flooding.
  - Flood risk from the River Cherwell is low.
  - Flood risk from the Birds Brook is likely to be low but to have a greater confidence, more detailed hydraulic modelling could be undertaken, especially as culvert realignment and opening is included in the proposed masterplan.
  - Flood risk from tidal / coastal, groundwater and foul water sources is low.
- PBA state under surface water flooding that "Thames Water has confirmed that the site has not been affected by surface water flooding" but it does not reference any other sources of information.
- On the EA's Flood Risk from Surface Water Map for the existing scenario, the site is shown to be at low to high risk from surface water flooding (it should be noted that these maps have been made available since the date of publication). It shows the following:
  - High Risk Scenario – depths are up to 900 mm and velocity is over 0.25 m/s;
  - Medium Risk Scenario – depths are up to 900 mm and velocity is over 0.25 m/s; and
  - Low Risk Scenario – depths are locally over 900 mm and velocity is over 0.25 m/s.
- The site is not shown to be at risk from reservoir flooding on the EA's Flood Risk from Reservoirs map.
- WSP concur that there is no requirement for the Sequential or Exceptions test.

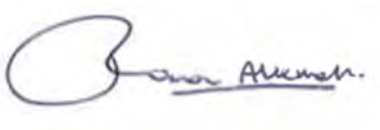
CONCLUSIONS AND RECOMMENDATIONS – FLOOD RISK ASSESSMENT

- Planning policy has been updated since the production of this report and any revision to the Flood Risk Assessment will now need to be undertaken in accordance with NPPF, rather than PPS25.
- New climate change guidance issued by the Environment Agency in 2016 and updated in 2017 will also need to be incorporated into any revised FRA. This recommends that for the Thames River Basin, the central allowance should be used for development in Flood Zone 1 which represents a 25% increase in peak river flows up to 2080. This is slightly higher than the 20% increase included as part of PBA's FRA.
- If the condition of the culverts is not known, it is recommended that a CCTV survey be undertaken to ensure that they are structurally sound to minimise the risk of any culvert collapse.
- To minimise the risk of culvert blockage, trash screens could be placed on culvert entrances.
- The proposed drainage strategy is not in line with current guidance and if the FRA is to be updated, there will be a requirement to further restrict the proposed surface water flows. Typically, surface water runoff will need to be reduced by at least 30% compared to the existing situation and may need to be restricted to the Greenfield runoff rate. This will require a greater amount of on-site attenuation storage.
- In addition, EA climate change guidance recommends a range of 20%-40% increase in peak rainfall intensity, which again, is likely to increase the amount of attenuation storage on-site.
- Surface water flooding can be mitigated against by careful design of the drainage system and site levels and the incorporation of minimum finished floor levels.

- It is recommended that the Client seeks reliance on the PBA FRA report which forms the basis of this peer review.

We trust the above information meets with your current requirements. However, should you require any further assistance please do not hesitate to contact us.

Yours sincerely,



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Paloma Capital LLP

KRAFT, SOUTHAM ROAD

Tank Investigation

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Paloma Capital **LLP**

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CONTENTS

APPENDICES

1 INTRODUCTION

1.1 AUTHORISATION

WSP was commissioned by Paloma Capital LLP to undertake a Phase 2 site investigation of a historical hydrocarbon storage area, henceforth referred to as the site at the Kraft site, Southam Road, Banbury. A location plan is included as Figure 1 in Appendix A.

The work was undertaken in accordance with our proposal (70041591, 21 November 2017) and following instruction from Paloma Capital LLP (via email on 21 November 2017).

1.2 CONTEXT AND OBJECTIVES

The site occupies an area approximately 0.1 hectares and is located in the south west of the wider Kraft factory site, located off the A361, Southam Road, Banbury. The site is currently disused and comprises areas of hard standing and a grassed embankment. A path runs through part of the site for pedestrian access.

WSP undertook a high level peer review of existing third party information for the wider Kraft site (70038703/TA/Final) in October 2017. The review identified the potential for onsite underground fuel storage tanks (USTs) or above ground storage tanks (ASTs) and associated infrastructure that had not been investigated as part of a previous phase of ground investigation. It is understood that the site is to be redeveloped for commercial use with hardstanding cover and no buildings.

WSP were commissioned to undertake a site investigation to establish the following:

- The presence or absence of any USTs or ASTs; and
- The potential for hydrocarbon contamination associated with the tanks, fuel lines and pumps.

1.3 SCOPE OF WORKS

To achieve the defined objectives, the following scope of works was completed:

- Utility Clearance to identify underground services;
- Formation of four shallow window sample boreholes with combined ground gas and groundwater monitoring installations in three of these;
- Representative soil sampling and screening;
- One round of ground gas and groundwater monitoring;
- Laboratory analysis of soil and groundwater samples;
- Non-intrusive geophysics (groundcheck) survey to establish presence of USTs; and
- Provision of factual and interpretive reporting, referencing the data obtained and providing a generic quantitative risk assessment for human health and controlled waters, produced in accordance with published guidance.

1.4 LIMITATIONS

WSP has undertaken the works detailed in this report in accordance with the agreement dated 21 November 2017. The report may be relied upon by Paloma Capital LLP, as “the Client” with the meaning given to that phrase within the agreement and subject to terms and conditions contained therein.

This report has been completed with regard to generally accepted consulting practices and may not be relied upon by any other party without the explicit written agreement of WSP. No other third party warranty, expressed or implied, is made as to the professional advice included in this report. This report must be used in its entirety.

Unless WSP has actual knowledge to the contrary, WSP shall assume the correctness and completeness of, and shall have no liability in respect of any inaccuracy, defect or omission in any information or materials provided, anecdotally or otherwise, by the Client or any other third party to WSP. WSP does not assume any liability for misrepresentation of information or for items not visible, accessible, present or supplied at the time of the study.

2 SUMMARY OF EXISTING INFORMATION

WSP has previously produced the following high level peer review on behalf of the client:

- Kraft, Southam Road, Banbury, Oxfordshire, OX16 2EP– High Level Peer Review of Selected Third Party Information, by WSP on behalf of Paloma Capital LLP, October 2017, Ref: 70038703/TA/Final

This document reviewed the following third party reports on the larger Kraft site:

- Flood Risk Assessment, Southam Road Retail Park, Banbury, by Peter Brett Associates LLP on behalf of Kraft Foods UK Ltd and Barwood Developments Ltd, March 2012, Ref.26004/005;
- Ground Conditions Desk Study, Kraft Phase 1, Banbury, by Hydrock on behalf of db symmetry Limited, April 2016, Ref: R/161279/001, Final; and
- Ground Investigation, Kraft Phase 2, Banbury, by Hydrock on behalf of db symmetry Limited, July 2016, Ref: R/161279/002, Final.

This high level peer review reported that previous ground investigation provided a good understanding of the ground conditions and the general environmental setting of the wider Kraft site. WSP considered that the ground investigation provided sufficient coverage of the wider Kraft site, with the exception of a historical fuel station, (DERV3 lubricating oil) which was not mentioned in the 2016 Hydrock Phase 1 or targeted in the following site investigation. No information regarding the presence of USTs/ASTs or hydrocarbon contamination was previously reported.

A WSP consultant visited the site on 30 November and conducted an interview with Adrian Everett of JDE Coffee regarding the historical fuel infrastructure on site. From this interview, the approximate locations of historical fuel pumps, USTs and ASTs were noted. The locations of these features are shown on Figure 3 in Appendix A. It was confirmed that an AST was present in southeast of the site and was removed. It was unclear if the USTs in the western part of the site were removed, still present or backfilled.

This report should be read in conjunction with the High Level Peer Review produced by WSP in October 2017. A brief summary of the relevant site information from the peer review and the previous reports has been compiled and is presented in Table 2-1 below.

Table 2-1 – Site Information Summary

Site Address	Kraft, Southam Road, Banbury OX16 2QU
National Grid Reference	445070 241421
Site Setting	The site is located approximately 1km to the north of Banbury town centre and comprises an area of hardstanding and embankment located in the south east of the wider Kraft site. To the north of the site, land is occupied by the Kraft factory. Surrounding land uses comprised mixed commercial premises to the west and east, with residential properties with gardens to the south.
Current Site Layout and Features	The site layout is shown on Figure 3 in Appendix A. The following notable features are present: An area which previously contained an AST; An area with potential USTs still in-situ; and Historic filling area. The ground cover comprises approximately 50% asphalt hardstanding and 50% soft landscaping (embankment area).
Site History	Historic mapping from 1881 shows the site as open fields. By 1965, an industrial building (food processing plant) was shown to the north east of the site (part of the larger Kraft factory extending off-site to the north). Anecdotal evidence from site staff suggests that underground storage tanks and associated fuel pumps were present north of the site during the 1980's. An above ground diesel storage tank was reported

	to be present in the southeast of the site from the 1990's to approximately 2012 when it was decommissioned and removed.
Ground Conditions	Made Ground is expected beneath the hardstanding. Depths of Made Ground are likely to vary across the site. Superficial (drift) deposits are expected to comprise either Alluvium (sandy gravelly silt) to between 1.2m and 4.6m bgl and/or River Terrace Deposits (gravely sand) to between 0.9 and 8.0m bgl. Bedrock of the Charmouth Mudstone is expected to underlie the drift deposits, to a maximum proven depth of 20.14m bgl. The Hydrock investigation in 2016 reported mudstone at 4.30m bgl, approximately 60m to the south east of the site.
Hydrology	The nearest surface water feature is Bird Brook, 150m to the north of the site. The brook flows from northwest to southeast and is culverted beneath a warehouse on the wider Kraft site, before flowing into the river Cherwell approximately 500m to the east.
Hydrogeology	The Alluvium and River Terrace Deposits likely to be present on site are designated as Secondary (A) aquifers. The underlying Charmouth Mudstone Formation is categorised as a Secondary undifferentiated aquifer.

It was unclear if an unexploded ordnance report was available for the site. Consequently, this was commissioned prior to commencing intrusive works. It confirmed there to be no readily available records of bombing or other significant military activity on the site. The site is therefore considered to have a low unexploded ordnance (UXO) hazard level. The summary report is included in Appendix F.

3 SITE INVESTIGATION STRATEGY

3.1 INVESTIGATION STRATEGY AND FIELDWORK

An updated utility survey was completed on 30 November 2017 to inform on potential below ground constraints and provide an updated record of below ground utilities prior to the intrusive investigation. A Ground Penetrating Radar (GPR) Survey was also attempted at this stage to establish the presence of any USTs, however the thickness of the vegetation cover in the area prevented the survey from being successful.

Using the updated utility plan and the historical locations of both above ground and below ground storage tanks, four drilling locations were identified. The rationale behind the locations and the final installation details are summarised in Table 3-1 below. Note that 8 potential drilling locations were cleared, WS101 – WS108, with the final drill locations selected as WS202, WS203, WS205 and WS207.

The intrusive works were completed under the full time supervision of a WSP engineer on the 05 December 2017 as described below:

- Each drilling location was reviewed on-site and initiated with hand dug pits to a target depth of 1.5m bgl to minimise the risk of damage to unidentified buried services / utilities;
- Boreholes were subsequently formed using a window sampling technique;
- Whilst logging soils the WSP engineer screened samples from the recovered material for visual and olfactory evidence of hydrocarbons and also used a calibrated Photo Ionisation Detector (PID) at 1m intervals to provide evidence of the presence of volatile organic compounds (VOCs). Details are included on the borehole logs (Appendix B) and are discussed in more detail in Section 4;
- A total of 23 disturbed soil samples from the boreholes were taken during drilling. Of these, ten samples were selected for laboratory chemical analyses and asbestos screening (Made Ground only);
- Three of the four boreholes were installed with 50mm diameter groundwater monitoring wells, which were finished at the surface with flush covers; and
- The newly installed monitoring wells were developed (removal of drilling fluids and sediments) following drilling of the boreholes on the 05 December 2017.

Exploratory hole locations are shown on Figure 2 and detailed borehole logs, including monitoring well installation details are included in Appendix B.

Groundwater sampling was undertaken on 15 December 2017. Representative groundwater samples were collected from WS202, WS205 and WS207, using low flow sampling methodology, which uses the stabilisation of groundwater parameters to indicate representative sampling.

Table 3-1 – Summary of Borehole Location Rationale and Installation Details

Borehole ID	Location and rationale	Total depth (m bgl)	Screened interval (m bgl)
WS202	Located on soft standing approximately 5m to the east of the historical above ground storage tank and downgradient of infrastructure.	4.3	2.0 - 4.0
WS203	Located on soft standing between the USTs and AST.	5	Not Installed
WS205	Located on soft standing approximately 5m to the east of the historical USTs.	5	3.5 - 5.0
WS207	Located on soft standing approximately 5m to the west of the historical USTs.	5	2.0 - 5.0

As the initial GPR survey had been unsuccessful in identifying any USTs, additional vegetation clearance and non-intrusive surveys were scheduled and completed on 04 and 08 January respectively.

3.2 LABORATORY TESTING

All chemical testing was carried out by ALS Environmental (ALS) in Hawarden, Cheshire, a UKAS accredited laboratory. Where available the individual analytical tests were MCERTS accredited. Soil and groundwater samples were tested for a range of analytes, which are summarised in Table 3-2. Soil and Groundwater laboratory certificates are included in Appendix C.

Table 3-2 – Summary of Laboratory Chemical Testing

Determinand	No of soil samples analysed	No of groundwater samples analysed
Total Petroleum Hydrocarbon Criteria Working Group (TPH CWG) and Benzene, Toluene, Ethylbenzene and Xylene (BTEX)	8	3
Heavy Metals	8	3
Hexavalent Chromium	8	3
16 Speciated Polyaromatic Hydrocarbons (PAHs)	8	3
Semi-volatile organic compounds (SVOCs)	2	2
Volatile Organic Compounds (VOCs)	2	2
pH	9	3
Soil Organic Matter	10	N/A
Asbestos Fibre Screen	8	N/A

4 SITE INVESTIGATION - RESULTS

4.1 NON-INTRUSIVE GROUND CHECK SURVEY

WSP attended site on 08 January 2018 with a specialist ground survey and geophysics company Zetica who employed the following techniques to observe the presence or absence of USTs in the embankment:

- Electromagnetic (EML) & Magnetometer;
- Time domain electromagnetic detection (TDEM); and
- 3D Ground Penetrating Radar.

Survey results were made available on 12 January 2018 and confirmed there to be an area of disturbed ground across the anticipated location of the USTs but no evidence of a UST being present. The survey also identified a number of utility services and a section of reinforced concrete. The full survey results are presented in Appendix F.

4.2 GROUND CONDITIONS

A summary of the ground conditions encountered is provided in Table 4-1 below.

Table 4-1 Summary of Ground Conditions Encountered

Strata	Maximum Reported Depth to Base of Strata (m bgl)	Thickness (m)
Made Ground (Granular and Cohesive)	3.4	3.4
Alluvium	3.5	1.6
River Terrace Deposits	4.7	1.3
Charmouth Mudstone	Not proven	Not proven

MADE GROUND

Made Ground was encountered in all locations and comprised:

- Grass over dark brown gravelly fine and medium SAND with occasional rootlets. Gravel is fine and medium angular to subrounded of various lithologies including brick and sandstone;
- Dark brownish orange very clayey gravelly medium and coarse SAND. Gravel is medium and coarse angular to subrounded of various lithologies including brick; and
- Firm dark brownish orange mottled grey sandy slightly gravelly CLAY. Gravel is fine and medium angular to subrounded of flint and coal.

The greatest depth of Made Ground was encountered in WS205, drilled within the embankment surrounding the suspected USTs.

SUPERFICIAL DEPOSITS

Alluvium was encountered in WS207 only, to a maximum depth of 3.5m bgl. The encountered ground comprised:

- Very soft dark bluish grey sandy slightly gravelly CLAY. Gravel is fine to coarse subrounded of mudstone and sandstone.

River terrace deposits were encountered in all boreholes to a maximum depth of 4.7 m bgl. The encountered ground comprised:

- Dark brownish orange sandy fine and medium subangular to rounded GRAVEL of mudstone, flint and quartz;

- Light greyish orange slightly gravelly fine and medium SAND with occasional small shells. Gravel is fine and medium angular of mudstone; and
- Soft light yellowish brown very sandy CLAY.

BEDROCK

Weathered Charmouth Mudstone bedrock was encountered in all boreholes and comprised:

- Soft dark bluish grey gravelly CLAY with occasional bivalve fragments. Gravel is fine and medium angular to subrounded of various lithologies including flint and mudstone.

Solid mudstone bedrock was only encountered in WS202 at a depth of 4.25m bgl, where it caused a refusal. The bedrock comprised:

- Thinly laminated dark bluish grey MUDSTONE with numerous bivalve shell fragments.

4.3 FIELD SCREENING

Visual and olfactory evidence of hydrocarbon contamination was noted in arisings from WS203 and WS205, as follows:

- BH203 - 1-1.5m bgl: Slight black hydrocarbon staining and moderate hydrocarbon odour. PID - 1ppm; and
- BH205 - 2-2.5m bgl: Slight hydrocarbon odour. PID - <1ppm

Soil arisings were tested using a PID at 0.5m intervals within Made Ground and 1m intervals within natural strata. No marginal (>10ppm) PID readings were recorded.

4.4 GROUNDWATER DATA AND HYDROGEOLOGICAL CONDITIONS

GROUNDWATER ELEVATION

Following well development on 05 December 2017 and a period of recovery, depth to resting groundwater level was recorded in advance of groundwater sampling. Groundwater monitoring data and relevant monitoring well details are summarised in Table 4-2 with groundwater elevations. Note that wells were screened into the Charmouth Mudstone Formation as during formation, groundwater strikes were generally within the base of the superficial / top of the bedrock. Groundwater elevations indicate that groundwater flow is towards the east in the direction of the ditch.

Table 4-2 Groundwater Monitoring Data and Monitoring Well Details

Monitoring Well	Screen Interval (m bgl)	Groundwater Depth (m bgl)	Groundwater Elevation (m AOD)	Response Zone	Groundwater Rest level within
WS202	2.0-4.0	1.38	94.74	River Terrace Deposits / Charmouth Mudstone Formation	Cohesive Made Ground
WS205	3.5-5	2.05	95.17	River Terrace Deposits/ Charmouth Mudstone Formation	Cohesive Made Ground
WS207	2-5	1.26	95.16	River Terrace Deposits / Alluvium / Charmouth Mudstone Formation	River Terrace Deposits

4.5 QUALITATIVE REVIEW OF SOIL AND GROUNDWATER ANALYTICAL DATA

SOILS DATA

The soils data highlighted the presence of low concentrations of petroleum hydrocarbons in all eight of the scheduled samples, with total hydrocarbons reported between 0.92mg/kg (WS205 at 3.5-3.7m bgl) and 156mg/kg (WS203 at 1.0-1.3m bgl).

The hydrocarbons detected were predominantly carbon chain 12 (C12) compounds and above, with only trace concentrations or below the laboratory limit of detection (LOD) for the lighter C5 to C12 compounds in the majority of samples tested.

Concentrations of metals were detected above the LOD in all samples. No notably high concentrations of heavy metals were detected. Asbestos was not identified in any of the samples tested.

Of the eight samples that were tested for Polyaromatic Hydrocarbons (PAH), only one sample returned results above the LOD. A trace concertation of 0.558mg/kg (total PAHs) was detected in sample WS205 at 0.7-1.0m bgl.

GROUNDWATER

No light non-aqueous phase liquid (LNAPL) was encountered in any of the monitoring wells during purging or sampling.

PAH concentrations were not identified above trace concentrations (>1µg/l) in any of the samples analysed. However, a low concentration of Fluoranthene (0.0146 µg/l) was detected in the sample from WS202. This is discussed in Chapter 5.

Two groundwater samples were analysed for Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs). Both samples returned results below the LOD.

Low concentrations of a range of metals, including arsenic, barium, boron, lead, selenium, vanadium and zinc were detected in all samples analysed. None of the concentrations are notably elevated. Results are considered consistent with background conditions rather that highlighting any site specific impact.

5 GENERIC QUANTITATIVE RISK ASSESSMENT

5.1 INTRODUCTION

The quantitative risk assessment has been undertaken in general accordance with guidance issued by the Environment Agency and comprises a Generic Quantitative Risk Assessment (GQRA) which screens concentrations against Generic Assessment Criteria (GAC).

5.2 HUMAN HEALTH RISK ASSESSMENT

SELECTION OF GAC – HUMAN HEALTH

Based on the intended use of the site for commercial property with hardstanding, the reported soil concentrations were compared against the GAC for commercial use using a soil organic matter (SOM) content of 1% on the basis of the site specific data.

If undisturbed, groundwater beneath a site will normally only present a risk to human health if it contains volatile substances (due to migration into buildings followed by inhalation). WSP has generated a set of human health GAC applicable to selected volatile compounds in groundwater, designed to be protective of human health. The methodology through which the GAC were derived is included in Appendix D.

SOIL ASSESSMENT RESULTS – HUMAN HEALTH

There were no exceedances of the GAC for any of the soil samples tested. Given the absence of GAC exceedances in all of the analysed samples, soil contamination is not considered to represent a risk to human health, based on the planned redevelopment scenario. The soil screening data are presented in full in Appendix E.

GROUNDWATER ASSESSMENT RESULTS – HUMAN HEALTH

Given that the site is proposed for commercial use, concentrations of volatile compounds in groundwater have been compared to the human health groundwater GAC for a commercial end use.

None of the groundwater concentrations exceed the GAC and it is considered that there is no unacceptable risk to human health from vapours as result of volatile compounds present in groundwater.

5.3 CONTROLLED WATERS RISK ASSESSMENT

SELECTION OF GAC – CONTROLLED WATERS

The Environment Agency's Remedial Targets Methodology states that groundwater GAC for Controlled Waters risk assessment should comprise a target concentration compliant with relevant statutory guidance and consistent with the conceptual site model.

The Bird Brook, located approximately 150m to the north of the site is considered to be an appropriate controlled waters receptor. The brook is culverted beneath the Kraft factory to the north, however the closest non culverted section of the brook is located approximately 200m to the north east of the site. The brook flows northwest to southeast, following the topography of the wider Kraft site. Environmental Quality Standards have been adopted as the most appropriate GAC for this receptor. One exceedance was identified.

Underlying groundwater within the Alluvium and River Terrace Deposits (Secondary A Aquifers) is also considered to be an appropriate controlled waters receptor and as such, UK drinking water standards (DWS) have been adopted as the most appropriate GAC, where available. WHO Health Organisation (WHO) criteria have been adopted in the absence of an appropriate DWS. No GAC exceedances were identified when considering groundwater receptors.

GROUNDWATER ASSESSMENT RESULTS – CONTROLLED WATERS

One exceedance of the GAC was recorded in the samples analysed, when considering a surface water receptor. The concentration of fluoranthene exceeded the GAC as shown in Table 5-2.

Table 5-2 – Summary of Groundwater Exceedances with Respect to a Surface Water Receptor

Analyte	Concentration (µg/l)	
	Screening Value	WS202
Fluoranthene	0.0063	0.0146

CONTROLLED WATER ASSESSMENT DISCUSSION

As groundwater is recorded as sitting within the River Terrace Deposits, there is a viable pathway for contamination to migrate through the permeable sand and gravel strata and reach the surface water receptor over time. Whilst the generic risk screen of the available groundwater data does highlight an exceedance of the assessment criteria for a surface water receptor, the exceedance is considered to be minor.

The overall risk profile with regards to controlled water receptors is considered to be low based on the following factors:

- Given the surface water environments in the vicinity of the site, the GAC used in the assessment is considered to be conservative;
- The contamination identified within WS202 is minor and has not been recorded in the other groundwater samples tested;
- There is minimal evidence of any ongoing source of contamination from the soils data;
- As the contamination migrates, the concentration will reduce due to the following processes:
  - Sorption of the contaminant to the soil;
  - Dispersion of the contaminant; and
  - Degradation of the contaminant.

As such it is considered that the concentration recorded in WS202 does not present a future risk to controlled waters.

5.4 CONCEPTUAL SITE MODEL SUMMARY

A review of the potential contamination linkages is provided in Table 5-3 below.

Table 5-3 Potential Contamination Linkages

Source	Secondary Source	Pathway	Receptor	Potential Risk
Former Site use – Hydrocarbon storage area and filling area.	Hydrocarbons and other chemicals within soils.	Leaching to shallow groundwater	Groundwater within the drift deposits	Low Soils data does not indicate the presence of significant hydrocarbon source from former site use. Potential risk to ground workers during any excavation works to be managed through work control procedures and PPE. No evidence of ground impact from potential offsite sources.
		Direct ingestion, dust inhalation, dermal contact and vapour inhalation (outdoors)	Ground workers / construction workers during redevelopment. Future site users post-redevelopment	

Source	Secondary Source	Pathway	Receptor	Potential Risk
		Volatilisation and vapour inhalation (indoors)	On-site workers/future users	Low No evidence of significant concentrations of volatile compounds within soils. No evidence for the presence of putrescible waste material in Made Ground. Potential for soil gas accumulation is low. Future site redevelopment is for hardstanding and no structures.
		Vertical migration in groundwater	Groundwater within superficial deposits (Secondary A aquifers)	Low Whilst there is evidence for minor existing groundwater impact at the site, the hydrocarbon concentrations detected in soils are not considered to be sufficient to drive a significant ongoing risk to groundwater quality.
	Impacted Groundwater	Lateral migration in groundwater	Groundwater within bedrock (Secondary undifferentiated aquifer).	Low Potential risk from dissolved phase hydrocarbons is considered to be low given the relatively low permeability and low sensitivity of the Charmouth Mudstone.
		Volatilisation and vapour inhalation (indoors)	On-site workers/ users and immediate neighbouring properties	Low No evidence of significant volatile compounds in groundwater. Future site redevelopment is for hardstanding and no structures.
		Lateral migration in groundwater	Surface water receptors.	Low The closet surface water receptor is approximately 200m down gradient of the source. Given the GAC exceedance is minor, the risk to the controlled surface water receptor is considered to be low.

In addition to the above it is noted that whilst Made Ground materials were encountered at the site the recovered samples did not identify the presence of asbestos containing materials (ACMs). Notwithstanding this asbestos is frequently encountered in made ground materials even where not encountered during sampling. Consequently, whilst the potential for significant areas of asbestos to be present is considered to be low based on the completed sampling the potential presence of ACMs should be considered during any site works particularly where disturbance of made ground is required.

6 SUMMARY AND RECOMMENDATIONS

6.1 CONTAMINATION

The site is underlain by granular and cohesive Made Ground over superficial river Terrace Deposits and Alluvium. Charmouth Mudstone bedrock is present at approximately 4.2m bgl.

Groundwater is resting within the Made Ground or River Terrace Deposits at depths between1.26m and 2.05m bgl and is inferred to flow east consistent with topography.

The investigation did not identify the presence of free phase hydrocarbons in the ground or resting on the groundwater (LNAPL) beneath the site.

The analytical results from soil samples was consistent with the field observations, with minor hydrocarbon contamination noted in the shallow soils. Asbestos was not detected in any of the samples analysed.

The analytical results from groundwater samples confirmed the presence of low concentrations of dissolved phase PAHs in one of the three groundwater samples, indicated by a minor GAC exceedance for fluoranthene.

Generic assessment of potential risks to human health and controlled waters receptors confirmed:

- No exceedances of commercial screening criteria protective of human health was recorded;
- A single GAC exceedance in the groundwater data indicate a theoretical risk to the closest surface water receptor (Bird Brook). However the minor exceedance in Fluoranthene is considered low risk to controlled waters given the distance between the contamination source and the surface water receptor and the absence of any ongoing source of contamination, or widespread contamination in the other groundwater samples retrieved.

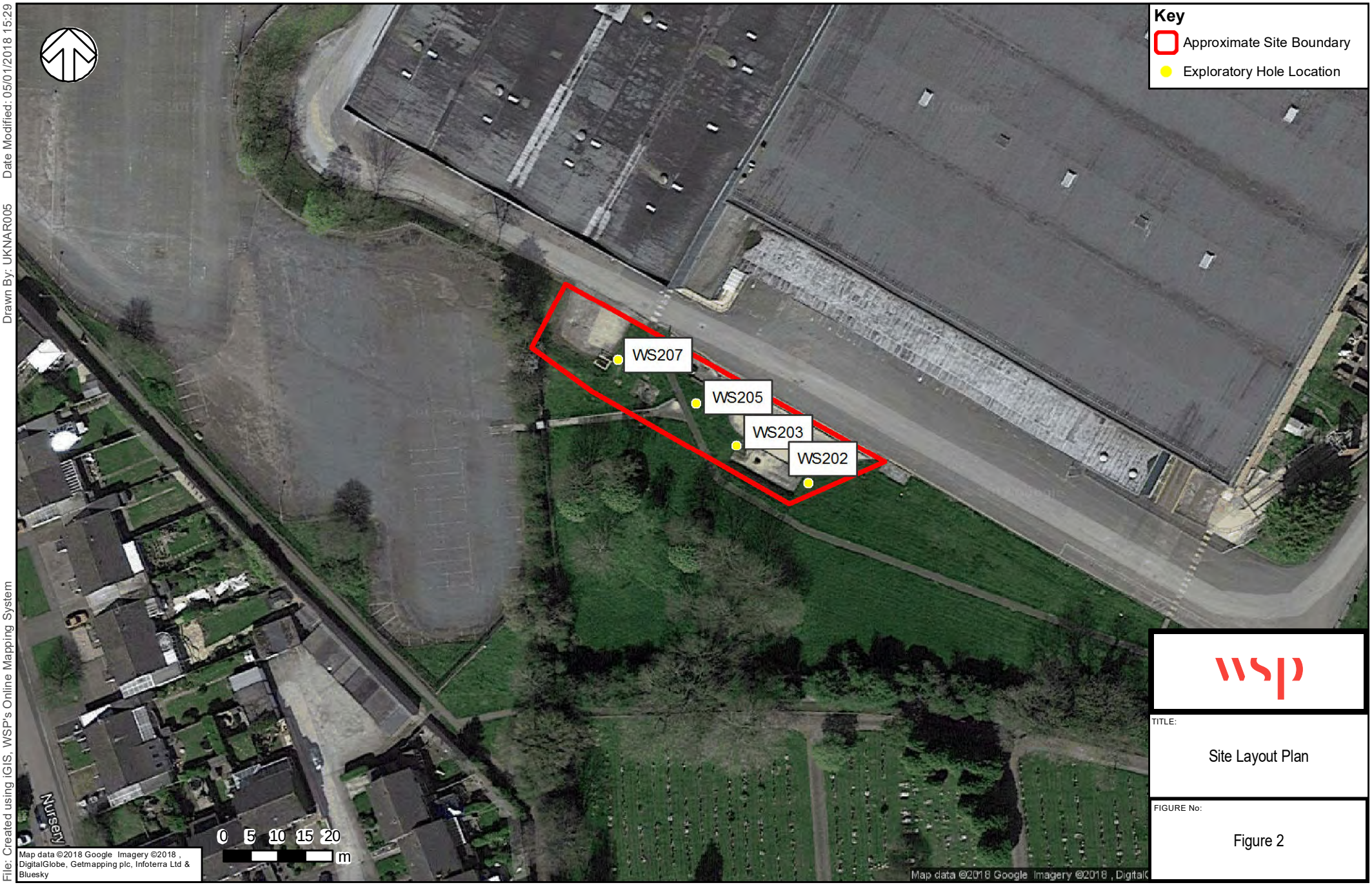
6.2 ABOVE GROUND AND BELOWGROUND TANKS

The investigation has confirmed that an above ground tank in the southeastern part of the site has been removed. The investigation has also confirmed that there are no underground storage tanks in the western part of the site.

Appendix A

FIGURES


Key
Approximate Site Boundary
Hennef Way
Grimsbury Green
Longelandes Way
Beaumont Rd
Ruscote Ave
Pipe Ln
Marley Way
Southam Rd
A4260
Webb Cl
Fowler Rd
Broome Way
Evenlode
Hill View Cres
Sinclair Ave
Neithrop Ave
Pinhill Rd
Nursery Dr
Warwick Rd
Cromwell Rd
Abbey Rd
Parklands
Northcot Ln
Orchard Way
Beesley Rd
Miller Rd
Wimborne Ave
Goodrington Cl
Reid Cl
Union St
Townsend
Foundry St
Cope Rd
Coopers Gate
Cherwell Dr
Spiceball Leisure Centre
Spiceball Park Rd
Banbury Museum Trust
Castle St
B4100
Mold Cres
Portway
Danesmoor
Windrush
High Furlong
Woodfield
Ironstones
Forgeway
0 50 100 150 200
m
Map data ©2018 Google
wsp
TITLE:
Site Location Plan
FIGURE No:
Figure 1
Date Modified: 05/01/2018 15:31
Drawn By: UKNAR005
File: Created using iGIS, WSP's Online Mapping System



wsp

TITLE:

Site Layout Plan

FIGURE No:

Figure 2

File: Created using iGIS, WSP's Online Mapping System

Drawn By: UKNAR005

Date Modified: 05/01/2018 15:29

Date Modified: 05/01/2018 15:54

Drawn By: UKNAR005

File: Created using iGIS, WSP's Online Mapping System

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TITLE:

Site Features Plan

FIGURE No:

Figure 3

Appendix B

LOGS

WSP Telephone:	**BOREHOLE LOG**	Hole No. **WS202**
	Project Kraft, Southam Road Tank Investigation	Sheet 1 of 2
Job No 70041591	Client Paloma Capital	Date 05-12-17 05-12-17

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
RP Drilling Ltd.	Dando Terrier	Stephen Jones	E 445131.981 N 241384.377	96.115

SAMPLES & TESTS							STRATA					Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thick-ness)	Description	Legend	Geology	Dia. mm
0.00-0.10	ES		0				96.02	0.10	Grass over dark brown gravelly fine and medium SAND with occasional rootlets. Gravel is fine and medium angular to subrounded of various lithologies brick and sandstone. (TOPSOIL)		TS	
0.00-0.00	EW											
0.70-1.00	ES		0					(1.80)	Firm dark brownish orange mottled grey sandy slightly gravelly CLAY. Gravel is fine and medium angular to subrounded of flint and coal. (MADE GROUND)		CMG	
							94.22	1.90	1.70 - 1.80 Band of fine and medium sand with occasional small angular gravel of coal			
2.10-2.30	ES		0					(0.70)	Light greyish orange slightly gravelly fine and medium SAND with occasional small shells. Gravel is fine and medium angular of mudstone.		RT	
							93.52	2.60				
2.70-2.90	ES		0			▼1		(0.60)	Dark brownish orange sandy fine and medium subangular to rounded GRAVEL of mudstone flint and quartz. (RIVER TERRACE GRAVELS)		RT	
							92.92	3.20				
3.50-3.70	ES		0						Very stiff dark bluish grey CLAY.		CHAM	
							91.87	4.25				
							91.82	4.30	Thinly laminated dark bluish grey MUDSTONE with numerous bivalve fragments.		CHAM	

Boring Progress						Water Strikes					
Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt	Date	Time	Strike	Minutes	Standing	Casing
						05-12-17		3.10			
Chiselling				Water Added							
From	To	Hours	Tool	From	To						

General Remarks

Hole terminated at 4.3 m bgl due to refusal. No evidence of olfactory or visual contamination.

Scale 1:62.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

WSP Telephone:	**BOREHOLE LOG**	Hole No. **WS203**
	Project Kraft, Southam Road Tank Investigation	Sheet 1 of 2
Job No 70041591	Client Paloma Capital	Date 05-12-17 05-12-17

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
RP Drilling Ltd.	Dando Terrier	Stephen Jones	E 445131.981 N 241384.377	96.092

SAMPLES & TESTS							STRATA					
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill Dia. mm
0.00-0.10	ES		0				95.99	0.10	Grass over dark brown gravelly fine and medium SAND with occasional rootlets. Gravel is fine and medium angular to subrounded of various lithologies brick and sandstone. (TOPSOIL)		TS	
1.00-1.30	ES		1					(1.65)	Firm dark brownish orange mottled grey sandy slightly gravelly CLAY. Gravel is fine and medium angular to subrounded of flint and coal. (MADE GROUND) 1.00 - 1.50 Slight black hydrocarbon staining and moderate hydrocarbon odour.		CMG	
2.10-2.30	ES		0				94.34	1.75	Light greyish orange slightly gravelly fine and medium SAND with occasional small shells. Gravel is fine and medium angular of mudstone.		RT	
2.50-2.80	ES		0			▼1	93.69	(0.65) 2.40	Dark brownish orange sandy fine and medium subangular to rounded GRAVEL of mudstone flint and quartz with rare small cobbles of sandstone. (RIVER TERRACE GRAVELS)		RT	
3.90-4.10	ES		0				93.24	2.85	Soft dark bluish grey gravelly CLAY. Gravel is fine and medium angular to subrounded of various lithologies including flint and mudstone.		CHAM	
							91.09	(2.15) 5.00				

Boring Progress					
Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt

Chiselling				Water Added	
From	To	Hours	Tool	From	To

Water Strikes					
Date	Time	Strike	Minutes	Standing	Casing
05-12-17		3.10			

General Remarks

Hole terminated at 5 m bgl due to refusal. Olfactory evidence of contamination noted at 1.0m - 1.5m bgl.

Scale 1:62.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

17 WSP BH LOG KRAFT, BANBURY 2.GPJ WSPETEMPLATE7.00.GDT 16/1/18

WSP

Telephone:

BOREHOLE LOG

Hole No. **WS205**

Project: Kraft, Southam Road Tank Investigation

Sheet: 1 of 2

Job No	Client	Date
70041591	Paloma Capital	05-12-17 05-12-17

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
RP Drilling Ltd.	Dando Terrier	Stephen Jones	E 445063.436 N 241383.758	97.223

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.00-0.10	ES		0				97.02	0.20	Grass over dark brown sandy slightly gravelly CLAY with occasional rootlets. Gravel is fine and medium angular to subrounded of various lithologies. (TOPSOIL)			TS	
0.00-0.00	EW								Firm dark brownish orange mottled grey sandy slightly gravelly CLAY with occasional small cobbles of brick of. Gravel is fine to coarse angular to subrounded of various lithologies including brick. (MADE GROUND)				
0.70-1.00	ES		0										
								(3.20)	1.70 - 1.75 Band of coarse concrete gravel 1.80 - 1.85 Band of coarse concrete gravel			CMG	
2.10-2.30	ES		0						2.00 - 2.50 Slight hydrocarbon odour				
									3.00 - 3.40 No recovery, assumed made ground				
							93.82	3.40					
3.50-3.70	ES		0						Dark orangish brown gravelly medium and coarse SAND. Gravel is fine and medium angular to rounded of various lithologies including flint, mudstone and quartz. (RIVER TERRACE GRAVELS)				
3.70-4.00	ES		0					(1.30)	4.00 - 4.20 No recovery 4.20 - 4.70 Shell fragments			RT	
							92.52	4.70					
							92.22	5.00	Very stiff dark bluish grey CLAY.			CHAM	

Boring Progress

Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt

Chiselling

From	To	Hours	Tool

Water Added

From	To

Water Strikes

Date	Time	Strike	Minutes	Standing	Casing

General Remarks

Hole terminated at 5.0 m bgl. Olfactory evidence of hydrocarbon noted in cohesive made ground.

Scale 1:62.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

17 WSP BH LOG KRAFT, BANBURY 2.GPJ WSPETEMPLATE7.00.GDT 16/1/18

WSP

Telephone:

BOREHOLE LOG

Hole No. **WS207**

Project: Kraft, Southam Road Tank Investigation

Sheet: 1 of 2

Job No: 70041591

Client: Paloma Capital

Date: 05-12-17 05-12-17

Contractor / Driller	Method/Plant Used	Logged By	Co-Ordinates (NGR)	Ground Level (m AOD)
RP Drilling Ltd.	Dando Terrier	Stephen Jones	E 445063.436 N 241383.758	96.423

SAMPLES & TESTS							STRATA						Install / Backfill
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P.Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thick-ness)	Description		Legend	Geology	Dia. mm
0.00-0.10	ES		0				96.22	0.20	Grass over dark greyish brown sandy slightly clayey fine to coarse angular to subangular GRAVEL of of concrete with occasional small cobbles of concrete. Gravel is fine and medium angular to subrounded of various lithologies. (MADE GROUND)			GMG	
0.00-0.00	EW												
0.40-0.60	ES		0				95.82	0.60				GMG	
1.10-1.30	ES		0					(1.30)	Dark brownish orange very clayey gravelly medium and coarse SAND. Gravel is medium and coarse angular to subrounded of various lithologies including brick.			CMG	
							94.52	1.90	Firm dark brownish orange mottled grey very sandy CLAY with rare small fragments of brick. (REWORKED CLAY) 1.00 - 1.50 Becoming less sandy 1.50 - 2.00 Becoming soft with little sand				
2.00-2.20	ES		0					(0.50)	Soft light yellowish brown very sandy CLAY.			RT	
							94.02	2.40					
2.60-2.80	ES		0					(0.60)	Dark orangish brown clayey medium and coarse SAND.			RT	
							93.42	3.00					
3.00-3.20	ES		0					(0.50)	Very soft dark bluish grey sandy slightly gravelly CLAY. Gravel is fine to coarse subrounded of mudstone and sandstone. (ALLUVIUM)			ALV	
							92.92	3.50					
3.60-3.80	ES		0					(0.60)	Dark greyish brown sandy slightly clayey fine subrounded to rounded GRAVEL of various lithologies.			RT	
							92.32	4.10					
4.10-4.30	ES		0					(0.90)	Very stiff dark bluish grey slightly gravelly CLAY with occasional bivalve shells. Gravel is coarse subrounded of mudstone and quartz.			CHAM	
							91.42	5.00					

Boring Progress

Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt

Chiselling

From	To	Hours	Tool

Water Added

From	To

Water Strikes

Date	Time	Strike	Minutes	Standing	Casing

General Remarks

Hole terminated at 5.0 m bgl. No visual or olfactory evidence of contamination.

Scale 1:62.5

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

17 WSP BH LOG KRAFT, BANBURY 2.GPJ WSPETEMPLATE7.00.GDT 16/1/18

LEGEND


GRANULAR MADE GROUND


COHESIVE MADE GROUND


Sandy CLAY


Clayey SAND


Sandy gravelly CLAY


Sandy GRAVEL


Gravelly CLAY

Appendix C

LABORATORY RESULTS

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

WSP PB MLN
The Victoria
150-182 The Quays
Salford
Manchester
Lancashire
M50 3SP

Attention: Stephen Jones

CERTIFICATE OF ANALYSIS

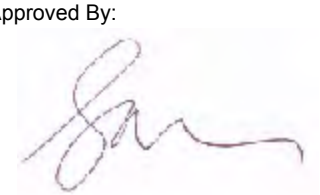
Date:	18 December 2017
Customer:	H_WSP_MAN
Sample Delivery Group (SDG):	171208-120
Your Reference:	70041591
Location:	Kraft, Banbury
Report No:	437139

We received 23 samples on Friday December 08, 2017 and 10 of these samples were scheduled for analysis which was completed on Monday December 18, 2017. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
16719032	WS202	ES	0.00 - 0.10	05/12/2017
16719037	WS202	ES	0.70 - 1.00	05/12/2017
16719044	WS202	ES	2.10 - 2.30	05/12/2017
16719054	WS202	ES	2.70 - 2.90	05/12/2017
16718906	WS202	ES	3.50 - 3.70	05/12/2017
16718901	WS203	ES	0.00 - 0.20	05/12/2017
16718981	WS203	ES	1.00 - 1.30	05/12/2017
16719014	WS203	ES	2.10 - 2.30	05/12/2017
16719021	WS203	ES	2.50 - 2.80	05/12/2017
16719027	WS203	ES	3.90 - 4.10	05/12/2017
16718915	WS205	ES	0.00 - 0.20	05/12/2017
16718922	WS205	ES	0.70 - 1.00	05/12/2017
16718930	WS205	ES	2.10 - 2.30	05/12/2017
16718937	WS205	ES	3.50 - 3.70	05/12/2017
16718943	WS205	ES	3.70 - 4.00	05/12/2017
16718949	WS207	ES	0.00 - 0.20	05/12/2017
16719003	WS207	ES	0.40 - 0.60	05/12/2017
16718957	WS207	ES	1.10 - 1.30	05/12/2017
16718963	WS207	ES	2.00 - 2.20	05/12/2017
16718971	WS207	ES	2.60 - 2.80	05/12/2017
16718990	WS207	ES	3.00 - 3.20	05/12/2017
16719009	WS207	ES	3.60 - 3.80	05/12/2017
16718997	WS207	ES	4.10 - 4.30	05/12/2017

Maximum Sample/Coolbox Temperature (°C) : **10.2**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

Validated

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	16719032		16719037			16718981			16719014		16718922			16718930			16718937		16718949	
			Customer Sample Reference	WS202		WS202			WS203			WS203		WS205			WS205			WS205		WS207	
			AGS Reference	ES		ES			ES			ES		ES			ES			ES		ES	
			Depth (m)	0.00 - 0.10		0.70 - 1.00			1.00 - 1.30			2.10 - 2.30		0.70 - 1.00			2.10 - 2.30			3.50 - 3.70		0.00 - 0.20	
			Container	250g Amber Jar (ALE210)	400g Tub (ALE214)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8			X		X			X					X			X					X
Boron Water Soluble	All	NDPs: 0 Tests: 8		X		X			X					X			X					X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 8				X			X			X		X			X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 8				X			X			X		X			X			X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 8						X			X		X			X			X		X		
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 8		X		X			X					X			X					X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 8		X		X			X					X			X					X	
PAH by GCMS	All	NDPs: 0 Tests: 8				X			X			X		X			X			X			
pH	All	NDPs: 0 Tests: 8				X			X			X		X			X			X			
Sample description	All	NDPs: 0 Tests: 10		X		X			X			X		X			X			X		X	
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 2							X								X						
Total Organic Carbon	All	NDPs: 0 Tests: 10		X		X			X			X		X			X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 8				X			X			X		X			X			X			
VOC MS (S)	All	NDPs: 0 Tests: 8						X			X		X			X			X				

16718957	WS207	ES	1.10 - 1.30	60g VOC (ALE215)	S					X									X
				400g Tub (ALE214)	S	X													
				250g Amber Jar (ALE210)	S		X	X	X		X	X	X	X	X		X	X	
16719003	WS207	ES	0.40 - 0.60	60g VOC (ALE215)	S					X									X
				400g Tub (ALE214)	S	X													
				250g Amber Jar (ALE210)	S		X	X	X		X	X	X	X	X		X	X	

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
16719032	WS202	0.00 - 0.10	Dark Brown	Sandy Clay	Vegetation	Stones
16719037	WS202	0.70 - 1.00	Dark Brown	Sandy Clay	Fibres	Vegetation
16718981	WS203	1.00 - 1.30	Dark Brown	Clay	Fibres	N/A
16719014	WS203	2.10 - 2.30	Dark Brown	Sandy Loam	Stones	None
16718922	WS205	0.70 - 1.00	Dark Brown	Sandy Clay	Crushed Brick	N/A
16718930	WS205	2.10 - 2.30	Dark Brown	Sandy Clay	Stones	None
16718937	WS205	3.50 - 3.70	Dark Brown	Sandy Loam	Vegetation	Stones
16718949	WS207	0.00 - 0.20	Dark Brown	Sandy Loam	Stones	None
16718957	WS207	1.10 - 1.30	Light Brown	Sandy Clay	Stones	None
16719003	WS207	0.40 - 0.60	Light Brown	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS202	WS203	WS203	WS205	WS205
			Depth (m)	0.00 - 0.10	0.70 - 1.00	1.00 - 1.30	2.10 - 2.30	0.70 - 1.00	2.10 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	08/12/2017	08/12/2017	08/12/2017	08/12/2017	08/12/2017	08/12/2017
			SDG Ref	171208-120	171208-120	171208-120	171208-120	171208-120	171208-120
			Lab Sample No.(s)	16719032	16719037	16718981	16719014	16718922	16718930
			AGS Reference	ES	ES	ES	ES	ES	ES
Moisture Content Ratio (% of as received sample)	%	PM024		14	15	19	18	18	15
Soil Organic Matter (SOM)	<0.35 %	TM132		3.62 #	<0.35 #	0.367 #	<0.35 #	2.38 #	<0.35 #
pH	1 pH Units	TM133			8.12 M	7.54 M	7.18 M	8.48 M	9.49 M
Chromium, Hexavalent	<0.6 mg/kg	TM151		<0.6 #	<0.6 #	<0.6 #		<0.6 #	<0.6 #
Arsenic	<0.6 mg/kg	TM181		16.5 M	52.6 M	81.3 M		24.6 M	18.7 M
Barium	<0.6 mg/kg	TM181		41.8 #	83.8 #	76.8 #		48.3 #	54.1 #
Beryllium	<0.01 mg/kg	TM181		0.533 M	2.5 M	1.88 M		1.63 M	1.45 M
Cadmium	<0.02 mg/kg	TM181		0.0373 M	0.64 M	0.347 M		0.452 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		26.2 M	42.1 M	86.2 M		34.6 M	23.7 M
Copper	<1.4 mg/kg	TM181		12.1 M	23.5 M	15.7 M		22.5 M	16.5 M
Lead	<0.7 mg/kg	TM181		16.6 M	29.4 M	22.7 M		37.3 M	16.2 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M		<1.4 M	0.922 M
Nickel	<0.2 mg/kg	TM181		15.7 M	56.2 M	64.3 M		39.4 M	30 M
Selenium	<1 mg/kg	TM181		<1 #	<10 #	<10 #		<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		32.1 #	113 #	135 #		76.2 #	67.7 #
Zinc	<1.9 mg/kg	TM181		143 M	121 M	117 M		99 M	84.6 M
Boron, water soluble	<1 mg/kg	TM222		<1 M	<1 M	<1 M		<1 M	<1 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS205	WS207	WS207	WS207		
			Depth (m)	3.50 - 3.70	0.00 - 0.20	0.40 - 0.60	1.10 - 1.30		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	05/12/2017	05/12/2017	05/12/2017	05/12/2017		
			Sampled Time	.	.	.	.		
			Date Received	08/12/2017	08/12/2017	08/12/2017	08/12/2017		
			SDG Ref	171208-120	171208-120	171208-120	171208-120		
			Lab Sample No.(s)	16718937	16718949	16719003	16718957		
			AGS Reference	ES	ES	ES	ES		
Moisture Content Ratio (% of as received sample)	%	PM024		16	8.9	11	15		
Soil Organic Matter (SOM)	<0.35 %	TM132		0.44 #	1.26 #	<0.35 #	<0.35 #		
pH	1 pH Units	TM133		7.56 M		8.11 M	8.14 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151			<0.6 #	<0.6 #	<0.6 #		
Arsenic	<0.6 mg/kg	TM181			9.84 M	21.9 M	14.5 M		
Barium	<0.6 mg/kg	TM181			38.5 #	38 #	69.1 #		
Beryllium	<0.01 mg/kg	TM181			0.783 M	1.39 M	1.31 M		
Cadmium	<0.02 mg/kg	TM181			0.0389 M	0.538 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181			2.02 M	16.1 M	31.2 M		
Copper	<1.4 mg/kg	TM181			21.6 M	<14 M	15.8 M		
Lead	<0.7 mg/kg	TM181			12.7 M	13.6 M	14.1 M		
Mercury	<0.14 mg/kg	TM181			0.623 M	<1.4 M	0.746 M		
Nickel	<0.2 mg/kg	TM181			9.48 M	28 M	35.5 M		
Selenium	<1 mg/kg	TM181			<1 #	<10 #	<1 #		
Vanadium	<0.2 mg/kg	TM181			45.7 #	54 #	62.7 #		
Zinc	<1.9 mg/kg	TM181			84.4 M	66.4 M	81.3 M		
Boron, water soluble	<1 mg/kg	TM222			<1 M	<1 M	<1 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS203	WS203	WS205	WS205	WS205
			Depth (m)	0.70 - 1.00	1.00 - 1.30	2.10 - 2.30	0.70 - 1.00	2.10 - 2.30	3.50 - 3.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	08/12/2017	08/12/2017	08/12/2017	08/12/2017	08/12/2017	08/12/2017
			SDG Ref	171208-120	171208-120	171208-120	171208-120	171208-120	171208-120
			Lab Sample No.(s)	16719037	16718981	16719014	16718922	16718930	16718937
			AGS Reference	ES	ES	ES	ES	ES	ES
Naphthalene-d8 % recovery**	%	TM218		92.2	100	100	99.2	106	98.8
Acenaphthene-d10 % recovery**	%	TM218		86.7	98	93.9	100	101	90.7
Phenanthrene-d10 % recovery**	%	TM218		86.2	95.9	92.4	94	101	88.7
Chrysene-d12 % recovery**	%	TM218		84.7	98.7	86.5	91.4	96	80.6
Perylene-d12 % recovery**	%	TM218		84.8	102	90.7	98.7	99.3	80.1
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.015 M	0.0274 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M	<0.017 M	0.0659 M	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.015 M	0.0606 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.014 M	0.0768 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	0.0446 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.015 M	0.0761 M	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.014 M	0.0409 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.015 M	0.057 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	<0.018 M	0.0451 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	<0.024 M	0.0635 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118	<0.118	0.558	<0.118	<0.118

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS207	WS207
			Depth (m)	0.40 - 0.60	1.10 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/12/2017	05/12/2017
			Sampled Time	.	.
			Date Received	08/12/2017	08/12/2017
			SDG Ref	171208-120	171208-120
			Lab Sample No.(s)	16719003	16718957
			AGS Reference	ES	ES
Naphthalene-d8 % recovery**	%	TM218		93.2	95.4
Acenaphthene-d10 % recovery**	%	TM218		89.3	92.3
Phenanthrene-d10 % recovery**	%	TM218		88	89.7
Chrysene-d12 % recovery**	%	TM218		87.8	89.6
Perylene-d12 % recovery**	%	TM218		90.1	92.2
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Semi Volatile Organic Compounds

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS203	WS205				
			Depth (m)	1.00 - 1.30	2.10 - 2.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	05/12/2017	05/12/2017				
			Sampled Time	.	.				
			Date Received	08/12/2017	08/12/2017				
			SDG Ref	171208-120	171208-120				
			Lab Sample No.(s)	16718981	16718930				
			AGS Reference	ES	ES				
Phenol	<0.1 mg/kg	TM157		<0.1	<0.1				
Pentachlorophenol	<0.1 mg/kg	TM157		<0.1	<0.1				
n-Nitroso-n-dipropylamine	<0.1 mg/kg	TM157		<0.1	<0.1				
Nitrobenzene	<0.1 mg/kg	TM157		<0.1	<0.1				
Isophorone	<0.1 mg/kg	TM157		<0.1	<0.1				
Hexachloroethane	<0.1 mg/kg	TM157		<0.1	<0.1				
Hexachlorocyclopentadiene	<0.1 mg/kg	TM157		<0.1	<0.1				
Hexachlorobutadiene	<0.1 mg/kg	TM157		<0.1	<0.1				
Hexachlorobenzene	<0.1 mg/kg	TM157		<0.1	<0.1				
n-Dioctyl phthalate	<0.1 mg/kg	TM157		<0.1	<0.1				
Dimethyl phthalate	<0.1 mg/kg	TM157		<0.1	<0.1				
Diethyl phthalate	<0.1 mg/kg	TM157		<0.1	<0.1				
n-Dibutyl phthalate	<0.1 mg/kg	TM157		<0.1	<0.1				
Dibenzofuran	<0.1 mg/kg	TM157		<0.1	<0.1				
Carbazole	<0.1 mg/kg	TM157		<0.1	<0.1				
Butylbenzyl phthalate	<0.1 mg/kg	TM157		<0.1	<0.1				
bis(2-Ethylhexyl) phthalate	<0.1 mg/kg	TM157		<0.1	<0.1				
bis(2-Chloroethoxy)methane	<0.1 mg/kg	TM157		<0.1	<0.1				
bis(2-Chloroethyl)ether	<0.1 mg/kg	TM157		<0.1	<0.1				
Azobenzene	<0.1 mg/kg	TM157		<0.1	<0.1				
4-Nitrophenol	<0.1 mg/kg	TM157		<0.1	<0.1				
4-Nitroaniline	<0.1 mg/kg	TM157		<0.1	<0.1				
4-Methylphenol	<0.1 mg/kg	TM157		<0.1	<0.1				
4-Chlorophenylphenylether	<0.1 mg/kg	TM157		<0.1	<0.1				
4-Chloroaniline	<0.1 mg/kg	TM157		<0.1	<0.1				
4-Chloro-3-methylphenol	<0.1 mg/kg	TM157		<0.1	<0.1				
4-Bromophenylphenylether	<0.1 mg/kg	TM157		<0.1	<0.1				
3-Nitroaniline	<0.1 mg/kg	TM157		<0.1	<0.1				
2-Nitrophenol	<0.1 mg/kg	TM157		<0.1	<0.1				
2-Nitroaniline	<0.1 mg/kg	TM157		<0.1	<0.1				
2-Methylphenol	<0.1 mg/kg	TM157		<0.1	<0.1				
1,2,4-Trichlorobenzene	<0.1 mg/kg	TM157		<0.1	<0.1				

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS203	WS205				
			Depth (m)	1.00 - 1.30	2.10 - 2.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	05/12/2017	05/12/2017				
			Sampled Time	-	-				
			Date Received	08/12/2017	08/12/2017				
			SDG Ref	171208-120	171208-120				
			Lab Sample No.(s)	16718981	16718930				
			AGS Reference	ES	ES				
2-Chlorophenol	<0.1 mg/kg	TM157		<0.1	<0.1				
2,6-Dinitrotoluene	<0.1 mg/kg	TM157		<0.1	<0.1				
2,4-Dinitrotoluene	<0.1 mg/kg	TM157		<0.1	<0.1				
2,4-Dimethylphenol	<0.1 mg/kg	TM157		<0.1	<0.1				
2,4-Dichlorophenol	<0.1 mg/kg	TM157		<0.1	<0.1				
2,4,6-Trichlorophenol	<0.1 mg/kg	TM157		<0.1	<0.1				
2,4,5-Trichlorophenol	<0.1 mg/kg	TM157		<0.1	<0.1				
1,4-Dichlorobenzene	<0.1 mg/kg	TM157		<0.1	<0.1				
1,3-Dichlorobenzene	<0.1 mg/kg	TM157		<0.1	<0.1				
1,2-Dichlorobenzene	<0.1 mg/kg	TM157		<0.1	<0.1				
2-Chloronaphthalene	<0.1 mg/kg	TM157		<0.1	<0.1				
2-Methylnaphthalene	<0.1 mg/kg	TM157		<0.1	<0.1				
Acenaphthylene	<0.1 mg/kg	TM157		<0.1	<0.1				
Acenaphthene	<0.1 mg/kg	TM157		<0.1	<0.1				
Anthracene	<0.1 mg/kg	TM157		<0.1	<0.1				
Benzo(a)anthracene	<0.1 mg/kg	TM157		<0.1	<0.1				
Benzo(b)fluoranthene	<0.1 mg/kg	TM157		<0.1	<0.1				
Benzo(k)fluoranthene	<0.1 mg/kg	TM157		<0.1	<0.1				
Benzo(a)pyrene	<0.1 mg/kg	TM157		<0.1	<0.1				
Benzo(g,h,i)perylene	<0.1 mg/kg	TM157		<0.1	<0.1				
Chrysene	<0.1 mg/kg	TM157		<0.1	<0.1				
Fluoranthene	<0.1 mg/kg	TM157		<0.1	<0.1				
Fluorene	<0.1 mg/kg	TM157		<0.1	<0.1				
Indeno(1,2,3-cd)pyrene	<0.1 mg/kg	TM157		<0.1	<0.1				
Phenanthrene	<0.1 mg/kg	TM157		<0.1	<0.1				
Pyrene	<0.1 mg/kg	TM157		<0.1	<0.1				
Naphthalene	<0.1 mg/kg	TM157		<0.1	<0.1				
Dibenzo(a,h)anthracene	<0.1 mg/kg	TM157		<0.1	<0.1				
Bis(2-chloroisopropyl) ether	<0.1 mg/kg	TM157		<0.1	<0.1				

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS203	WS203	WS205	WS205	WS205
			Depth (m)	0.70 - 1.00	1.00 - 1.30	2.10 - 2.30	0.70 - 1.00	2.10 - 2.30	3.50 - 3.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	08/12/2017	08/12/2017	08/12/2017	08/12/2017	08/12/2017	08/12/2017
			SDG Ref	171208-120	171208-120	171208-120	171208-120	171208-120	171208-120
			Lab Sample No.(s)	16719037	16718981	16719014	16718922	16718930	16718937
			AGS Reference	ES	ES	ES	ES	ES	ES
GRO Surrogate % recovery**	%	TM089		119	107	121	123	119	126
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.044 M	6.47 M	<0.044 M	<0.044 M	<0.044 M	<0.044 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	0.0394	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	0.82	0.0146	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	3.02	0.0159	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	35.9	<0.1	<0.1	2.71	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.85	48.5	<0.1	<0.1	5.97	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		0.977	27.2	<0.1	8.9	4.84	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	0.925	2.61	1.99	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1.83	112	2.61	10.9	13.5	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	0.569	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	2.01	0.011	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	10.9	<0.1	<0.1	1.34	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	18.2	<0.1	<0.1	1.97	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		<0.1	8.24	<0.1	8.3	2.7	0.923
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	4.97	5.04	<0.1	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	3.18	1.85	<0.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		<0.1	37.4	4.97	13.3	6	0.923
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1.83	156	7.63	24.2	19.5	0.923
Aromatics >EC16-EC35	<0.1 mg/kg	TM173		<0.1	26.5	<0.1	8.3	4.67	0.923

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS207	WS207				
			Depth (m)	0.40 - 0.60	1.10 - 1.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	05/12/2017	05/12/2017				
			Sampled Time	.	.				
			Date Received	08/12/2017	08/12/2017				
			SDG Ref	171208-120	171208-120				
			Lab Sample No.(s)	16719003	16718957				
			AGS Reference	ES	ES				
GRO Surrogate % recovery**	%	TM089		116	107				
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.044 M	<0.044 M				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.05	<0.1				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		1.24	0.729				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		4.86	0.872				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		0.712	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		7.86	1.6				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	0.728				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	0.798				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		17.9	1.86				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		69.1	<0.1				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		36.7	<0.1				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		86.9	3.39				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		94.8	4.99				
Aromatics >EC16-EC35	<0.1 mg/kg	TM173		17.9	2.66				

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sampled Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			WS202	0.70 - 1.00	Soil/Solid (S)	05/12/2017	.	08/12/2017	171208-120	16719037	ES
			WS203	1.00 - 1.30	Soil/Solid (S)	05/12/2017	.	08/12/2017	171208-120	16718981	ES
			WS203	2.10 - 2.30	Soil/Solid (S)	05/12/2017	.	08/12/2017	171208-120	16719014	ES
			WS205	0.70 - 1.00	Soil/Solid (S)	05/12/2017	.	08/12/2017	171208-120	16718922	ES
			WS205	2.10 - 2.30	Soil/Solid (S)	05/12/2017	.	08/12/2017	171208-120	16718930	ES
			WS205	3.50 - 3.70	Soil/Solid (S)	05/12/2017	.	08/12/2017	171208-120	16718937	ES
Dibromofluoromethane**	%	TM116		104				106			
Toluene-d8**	%	TM116		94.2				96.5			
4-Bromofluorobenzene**	%	TM116		94.7				95.7			
Dichlorodifluoromethane	<0.006 mg/kg	TM116		<0.06 M				<0.06 M			
Chloromethane	<0.007 mg/kg	TM116		<0.07 #				<0.07 #			
Vinyl Chloride	<0.006 mg/kg	TM116		<0.06 M				<0.06 M			
Bromomethane	<0.01 mg/kg	TM116		<0.1 M				<0.1 M			
Chloroethane	<0.01 mg/kg	TM116		<0.1 M				<0.1 M			
Trichlorofluorormethane	<0.006 mg/kg	TM116		<0.06 M				<0.06 M			
1,1-Dichloroethene	<0.01 mg/kg	TM116		<0.1 #				<0.1 #			
Carbon Disulphide	<0.007 mg/kg	TM116		<0.07 M				<0.07 M			
Dichloromethane	<0.01 mg/kg	TM116		<0.1 #				<0.1 #			
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1 M	<0.1 M	<0.1 M	<0.1 M		<0.1 M		<0.1 M	
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116		<0.1 M				<0.1 M			
1,1-Dichloroethane	<0.008 mg/kg	TM116		<0.08 M				<0.08 M			
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116		<0.06 M				<0.06 M			
2,2-Dichloropropane	<0.01 mg/kg	TM116		<0.1				<0.1			
Bromochloromethane	<0.01 mg/kg	TM116		<0.1 M				<0.1 M			
Chloroform	<0.008 mg/kg	TM116		<0.08 M				<0.08 M			
1,1,1-Trichloroethane	<0.007 mg/kg	TM116		<0.07 M				<0.07 M			
1,1-Dichloropropene	<0.01 mg/kg	TM116		<0.1 M				<0.1 M			
Carbontetrachloride	<0.01 mg/kg	TM116		<0.1 M				<0.1 M			
1,2-Dichloroethane	<0.005 mg/kg	TM116		<0.05 M				<0.05 M			
Benzene	<0.009 mg/kg	TM116	<0.09 M	<0.09 M	<0.09 M	<0.09 M		<0.09 M		<0.09 M	
Trichloroethene	<0.009 mg/kg	TM116		<0.09 #				<0.09 #			
1,2-Dichloropropane	<0.01 mg/kg	TM116		<0.1 M				<0.1 M			
Dibromomethane	<0.009 mg/kg	TM116		<0.09 M				<0.09 M			
Bromodichloromethane	<0.007 mg/kg	TM116		<0.07 M				<0.07 M			
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116		<0.1 M				<0.1 M			
Toluene	<0.007 mg/kg	TM116	<0.07 M	<0.07 M	<0.07 M	<0.07 M		<0.07 M		<0.07 M	
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116		<0.1				<0.1			
1,1,2-Trichloroethane	<0.01 mg/kg	TM116		<0.1 M				<0.1 M			

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS203	WS203	WS205	WS205	WS205
			Depth (m)	0.70 - 1.00	1.00 - 1.30	2.10 - 2.30	0.70 - 1.00	2.10 - 2.30	3.50 - 3.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	08/12/2017	08/12/2017	08/12/2017	08/12/2017	08/12/2017	08/12/2017
			SDG Ref	171208-120	171208-120	171208-120	171208-120	171208-120	171208-120
			Lab Sample No.(s)	16719037	16718981	16719014	16718922	16718930	16718937
			AGS Reference	ES	ES	ES	ES	ES	ES
1,3-Dichloropropane	<0.007 mg/kg	TM116			<0.07 M			<0.07 M	
Tetrachloroethene	<0.005 mg/kg	TM116			<0.05 M			<0.05 M	
Dibromochloromethane	<0.01 mg/kg	TM116			<0.1 M			<0.1 M	
1,2-Dibromoethane	<0.01 mg/kg	TM116			<0.1 M			<0.1 M	
Chlorobenzene	<0.005 mg/kg	TM116			<0.05 M			<0.05 M	
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116			<0.1 M			<0.1 M	
Ethylbenzene	<0.004 mg/kg	TM116	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	
p/m-Xylene	<0.01 mg/kg	TM116	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	
o-Xylene	<0.01 mg/kg	TM116	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	
Styrene	<0.01 mg/kg	TM116		<0.1 #			<0.1 #		
Bromoform	<0.01 mg/kg	TM116		<0.1 M			<0.1 M		
Isopropylbenzene	<0.005 mg/kg	TM116		<0.05 #			<0.05 #		
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.1 #			<0.1 #		
1,2,3-Trichloropropane	<0.016 mg/kg	TM116		<0.16 M			<0.16 M		
Bromobenzene	<0.01 mg/kg	TM116		<0.1 M			<0.1 M		
Propylbenzene	<0.01 mg/kg	TM116		<0.1 M			<0.1 M		
2-Chlorotoluene	<0.009 mg/kg	TM116		<0.09 M			<0.09 M		
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116		<0.08 M			<0.08 M		
4-Chlorotoluene	<0.01 mg/kg	TM116		<0.1 M			<0.1 M		
tert-Butylbenzene	<0.014 mg/kg	TM116		<0.14 M			<0.14 M		
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116		<0.09 #			<0.09 #		
sec-Butylbenzene	<0.01 mg/kg	TM116		<0.1			<0.1		
4-Isopropyltoluene	<0.01 mg/kg	TM116		<0.1 M			<0.1 M		
1,3-Dichlorobenzene	<0.008 mg/kg	TM116		<0.08 M			<0.08 M		
1,4-Dichlorobenzene	<0.005 mg/kg	TM116		<0.05 M			<0.05 M		
n-Butylbenzene	<0.011 mg/kg	TM116		<0.11			<0.11		
1,2-Dichlorobenzene	<0.01 mg/kg	TM116		<0.1 M			<0.1 M		
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116		<0.14 M			<0.14 M		
Tert-amyl methyl ether	<0.01 mg/kg	TM116	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116		<0.2			<0.2		
Hexachlorobutadiene	<0.02 mg/kg	TM116		<0.2			<0.2		
Naphthalene	<0.013 mg/kg	TM116		<0.13 M			<0.13 M		

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	Component	LOD/Units	Method	WS202	WS203	WS203	WS205	WS205	WS205
Depth (m)				0.70 - 1.00	1.00 - 1.30	2.10 - 2.30	0.70 - 1.00	2.10 - 2.30	3.50 - 3.70
Sample Type				Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Date Sampled				05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017
Sampled Time				.	.	.	.	.	.
Date Received				08/12/2017	08/12/2017	08/12/2017	08/12/2017	08/12/2017	08/12/2017
SDG Ref				171208-120	171208-120	171208-120	171208-120	171208-120	171208-120
Lab Sample No.(s)				16719037	16718981	16719014	16718922	16718930	16718937
AGS Reference				ES	ES	ES	ES	ES	ES
	1,2,3-Trichlorobenzene	<0.02	TM116		<0.2 #			<0.2 #	

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS207	WS207
			Depth (m)	0.40 - 0.60	1.10 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/12/2017	05/12/2017
			Sampled Time	.	.
			Date Received	08/12/2017	08/12/2017
			SDG Ref	171208-120	171208-120
			Lab Sample No.(s)	16719003	16718957
			AGS Reference	ES	ES
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M
Tert-amyl methyl ether	<0.01 mg/kg	TM116		<0.1 #	<0.1 #

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS202 ES 0.00 - 0.10 SOLID 05/12/2017 00:00:00 09/12/2017 09:07:21 171208-120 16719032 TM048	15/12/2017	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS202 ES 0.70 - 1.00 SOLID 05/12/2017 00:00:00 09/12/2017 10:23:35 171208-120 16719037 TM048	15/12/2017	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS203 ES 1.00 - 1.30 SOLID 05/12/2017 00:00:00 09/12/2017 10:47:55 171208-120 16718981 TM048	15/12/2017	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS205 ES 0.70 - 1.00 SOLID 05/12/2017 00:00:00 09/12/2017 10:21:32 171208-120 16718922 TM048	15/12/2017	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS205 ES 2.10 - 2.30 SOLID 05/12/2017 00:00:00 09/12/2017 09:08:42 171208-120 16718930 TM048	15/12/2017	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS207 ES 0.00 - 0.20 SOLID 05/12/2017 00:00:00 09/12/2017 09:25:32 171208-120 16718949 TM048	15/12/2017	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS207 ES 0.40 - 0.60 SOLID 05/12/2017 00:00:00 09/12/2017 09:23:57 171208-120 16719003 TM048	15/12/2017	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WS207 ES 1.10 - 1.30 SOLID 05/12/2017 00:00:00 09/12/2017 09:26:41 171208-120 16718957 TM048	15/12/2017	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Determination of PAH by GCMS Microwave extraction	The determination of PAH in soil samples by microwave extraction and GC-MS
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	16719032	16719037	16718981	16719014	16718922	16718930	16718937	16718949	16718957	16719003
Customer Sample Ref.	WS202	WS202	WS203	WS203	WS205	WS205	WS205	WS207	WS207	WS207
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
Depth	0.00 - 0.10	0.70 - 1.00	1.00 - 1.30	2.10 - 2.30	0.70 - 1.00	2.10 - 2.30	3.50 - 3.70	0.00 - 0.20	1.10 - 1.30	0.40 - 0.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	15-Dec-2017	15-Dec-2017	15-Dec-2017		15-Dec-2017	15-Dec-2017		15-Dec-2017	15-Dec-2017	15-Dec-2017
Boron Water Soluble	18-Dec-2017	14-Dec-2017	18-Dec-2017		18-Dec-2017	14-Dec-2017		14-Dec-2017	14-Dec-2017	14-Dec-2017
EPH CWG (Aliphatic) GC (S)		12-Dec-2017	12-Dec-2017	15-Dec-2017	13-Dec-2017	12-Dec-2017	12-Dec-2017		12-Dec-2017	15-Dec-2017
EPH CWG (Aromatic) GC (S)		12-Dec-2017	12-Dec-2017	15-Dec-2017	13-Dec-2017	12-Dec-2017	12-Dec-2017		12-Dec-2017	15-Dec-2017
GRO by GC-FID (S)		13-Dec-2017	13-Dec-2017	13-Dec-2017	13-Dec-2017	13-Dec-2017	13-Dec-2017		13-Dec-2017	13-Dec-2017
Hexavalent Chromium (s)	15-Dec-2017	15-Dec-2017	14-Dec-2017		15-Dec-2017	14-Dec-2017		15-Dec-2017	14-Dec-2017	14-Dec-2017
Metals in solid samples by OES	15-Dec-2017	15-Dec-2017	15-Dec-2017		15-Dec-2017	15-Dec-2017		15-Dec-2017	15-Dec-2017	15-Dec-2017
PAH by GCMS		14-Dec-2017	14-Dec-2017	14-Dec-2017	15-Dec-2017	15-Dec-2017	14-Dec-2017		14-Dec-2017	14-Dec-2017
pH		13-Dec-2017	14-Dec-2017	12-Dec-2017	14-Dec-2017	14-Dec-2017	12-Dec-2017		14-Dec-2017	14-Dec-2017
Sample description	09-Dec-2017	09-Dec-2017	09-Dec-2017	09-Dec-2017	09-Dec-2017	09-Dec-2017	09-Dec-2017	09-Dec-2017	09-Dec-2017	09-Dec-2017
Semi Volatile Organic Compounds			13-Dec-2017			13-Dec-2017				
Total Organic Carbon	12-Dec-2017	14-Dec-2017	12-Dec-2017	12-Dec-2017	14-Dec-2017	14-Dec-2017	12-Dec-2017	13-Dec-2017	13-Dec-2017	13-Dec-2017
TPH CWG GC (S)		13-Dec-2017	13-Dec-2017	15-Dec-2017	13-Dec-2017	13-Dec-2017	13-Dec-2017		13-Dec-2017	15-Dec-2017
VOC MS (S)		13-Dec-2017	13-Dec-2017	13-Dec-2017	13-Dec-2017	13-Dec-2017	13-Dec-2017		13-Dec-2017	13-Dec-2017

CERTIFICATE OF ANALYSIS

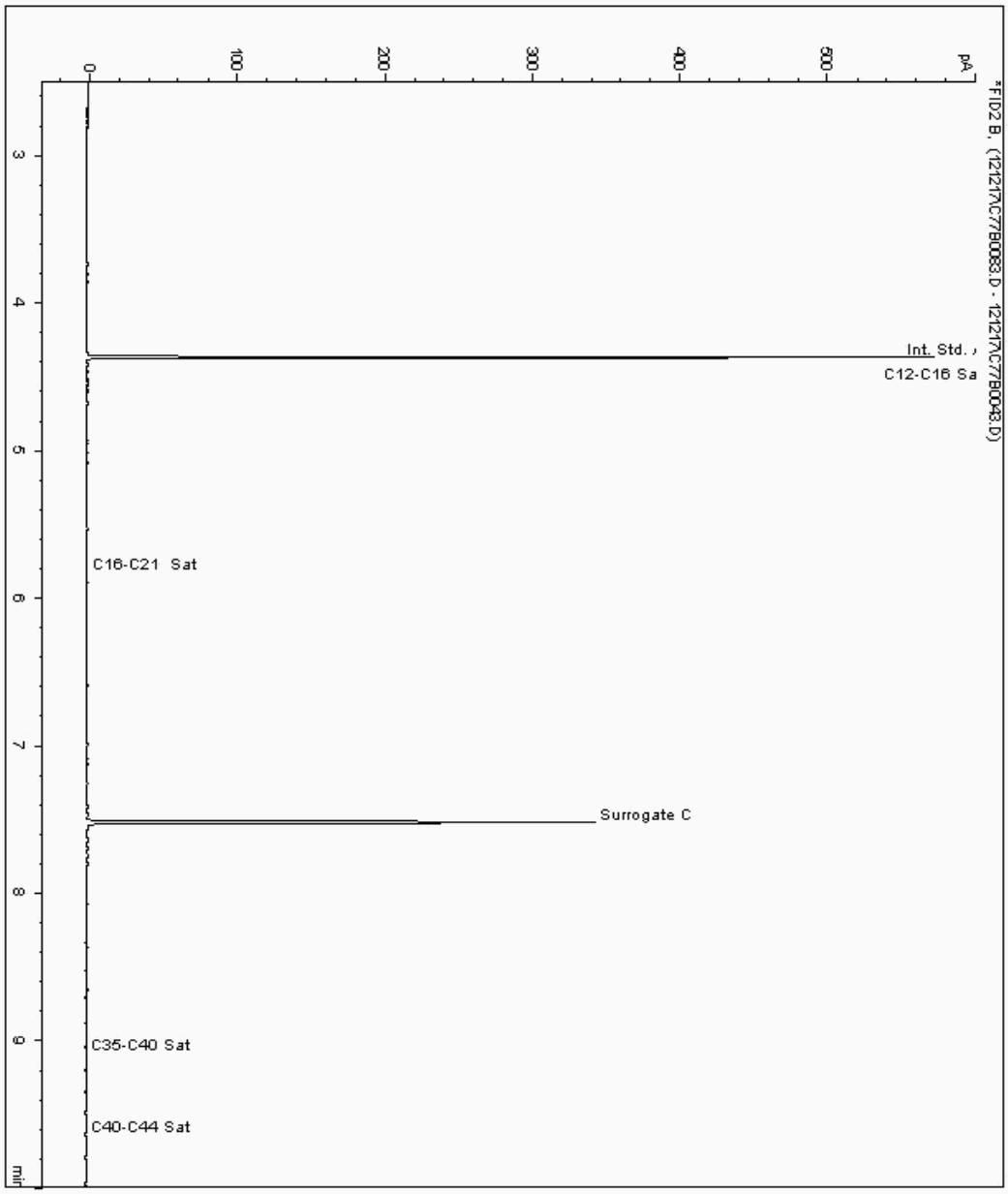
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S) **Sample No :** 16724713 **Depth :** 0.40 - 0.60
Sample ID : WS207

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 15682214-
Date Acquired : 12/14/2017 6:46:56 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.970



CERTIFICATE OF ANALYSIS

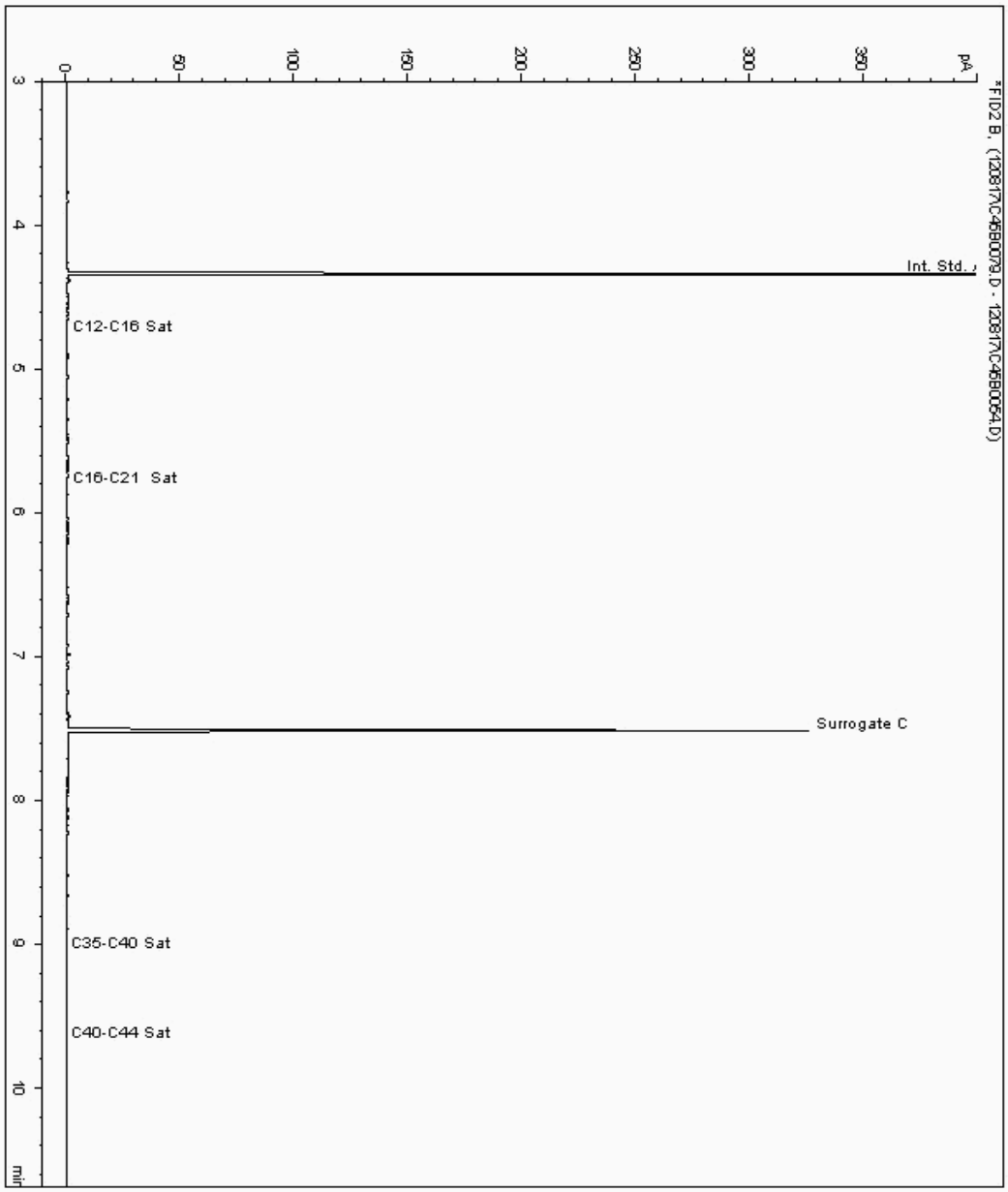
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S) **Sample No :** 16724784 **Depth :** 1.10 - 1.30
Sample ID : WS207

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682129-
Date Acquired : 12/12/2017 04:05:56 PM
Units : ppb
Dilution: WS207[1.10 - 1.30] ->



CERTIFICATE OF ANALYSIS

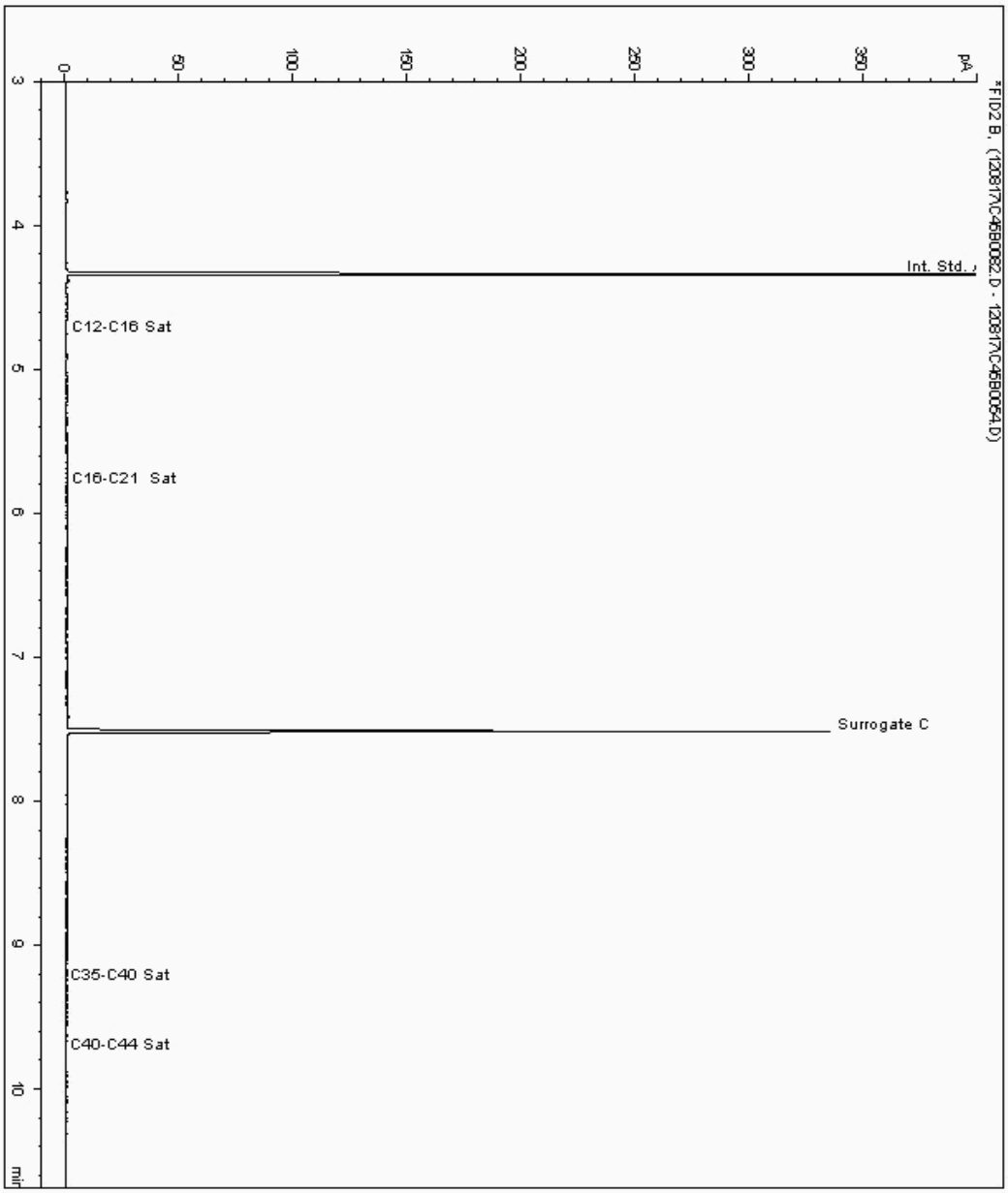
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S) **Sample No :** 16724877 **Depth :** 0.70 - 1.00
Sample ID : WS202

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682258-
Date Acquired : 12/12/2017 05:05:04 PM
Units : ppb
Dilution: WS202[0.70 - 1.00] ->



CERTIFICATE OF ANALYSIS

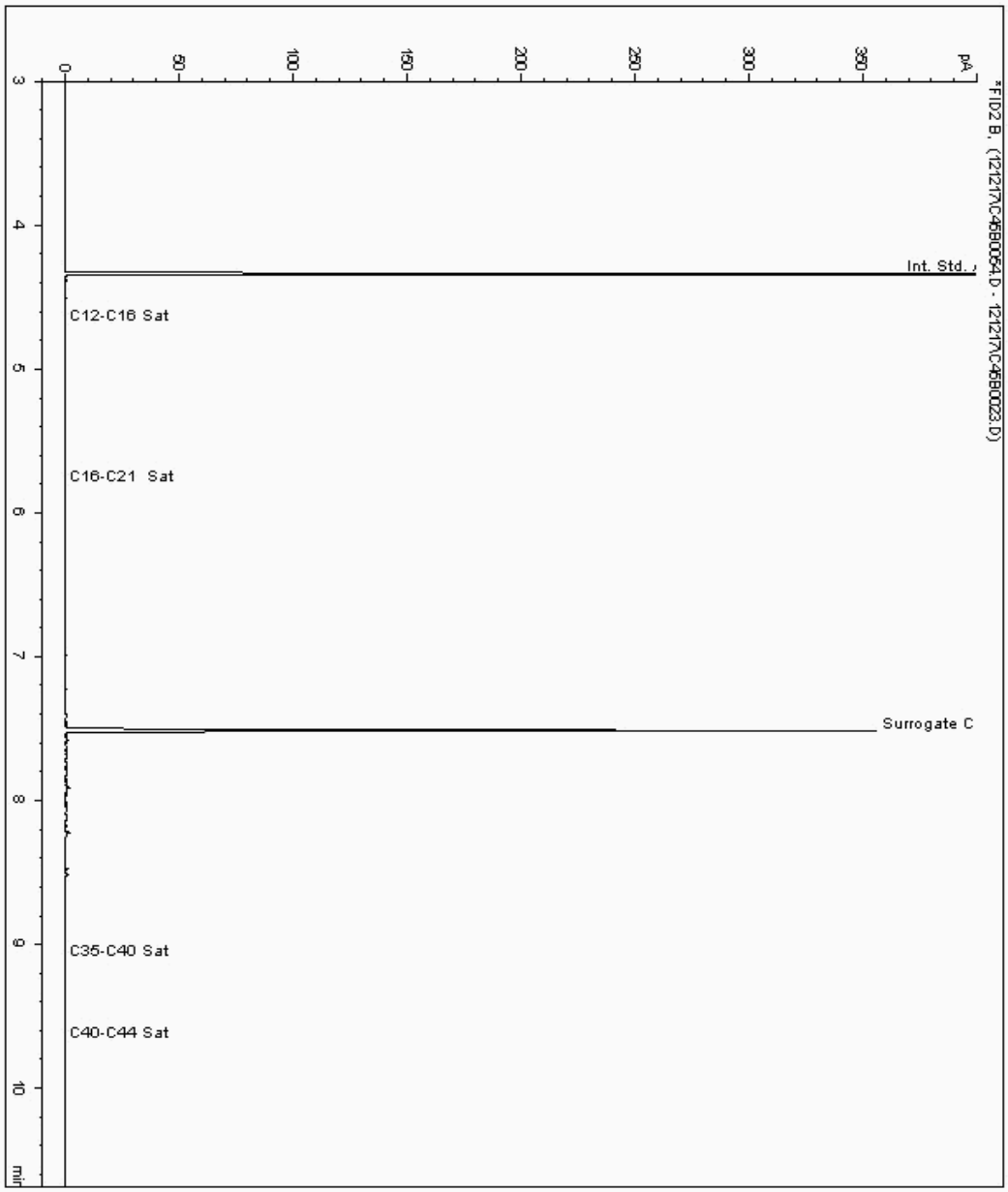
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S) **Sample No :** 16724974 **Depth :** 0.70 - 1.00
Sample ID : WS205

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682018-
Date Acquired : 13/12/2017 06:51:24 PM
Units : ppb
Dilution: WS205[0.70 - 1.00] ->



CERTIFICATE OF ANALYSIS

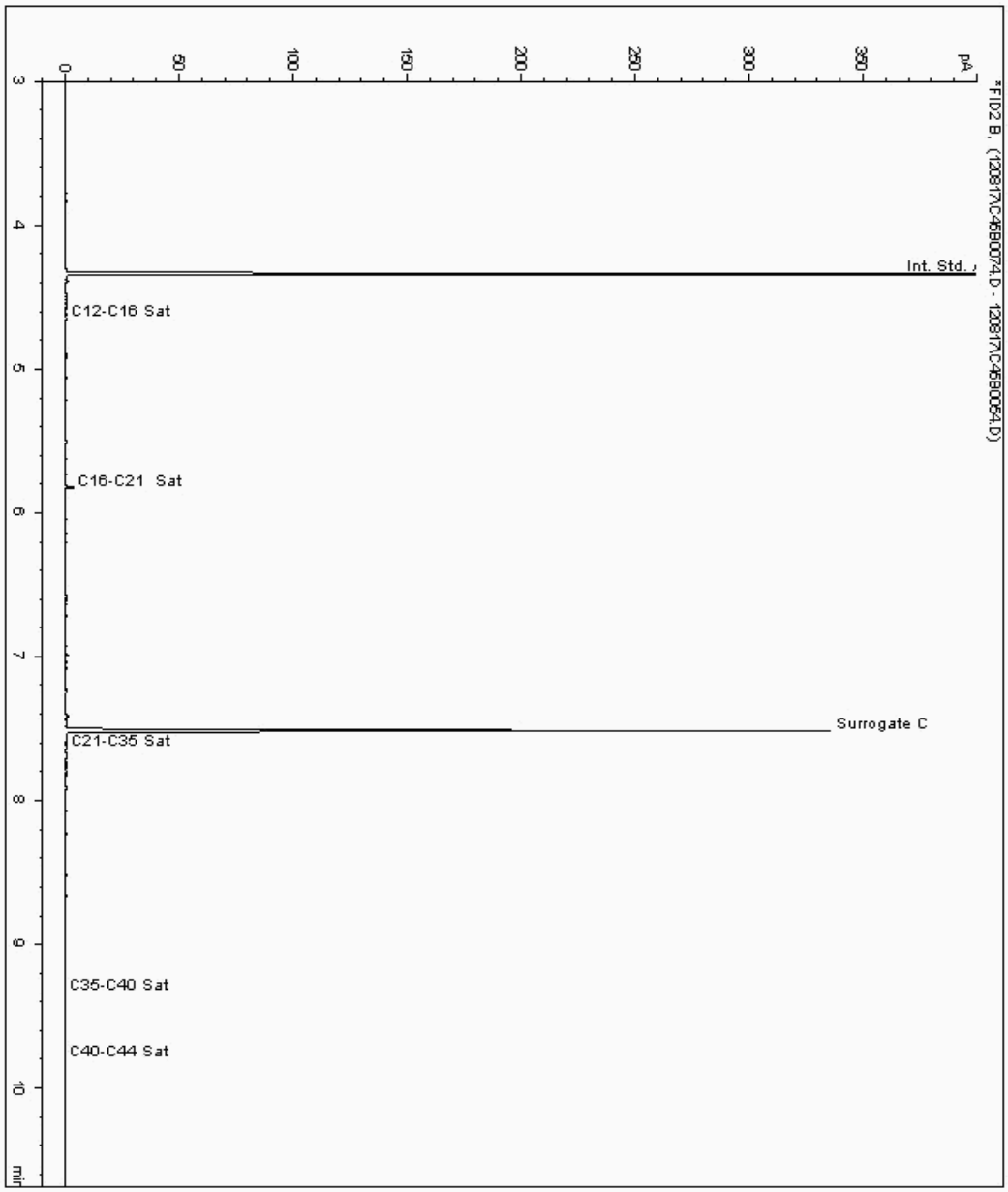
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S) **Sample No :** 16725482 **Depth :** 3.50 - 3.70
Sample ID : WS205

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682074-
Date Acquired : 12/12/2017 02:42:35 PM
Units : ppb
Dilution: WS205[3.50 - 3.70] ->



CERTIFICATE OF ANALYSIS

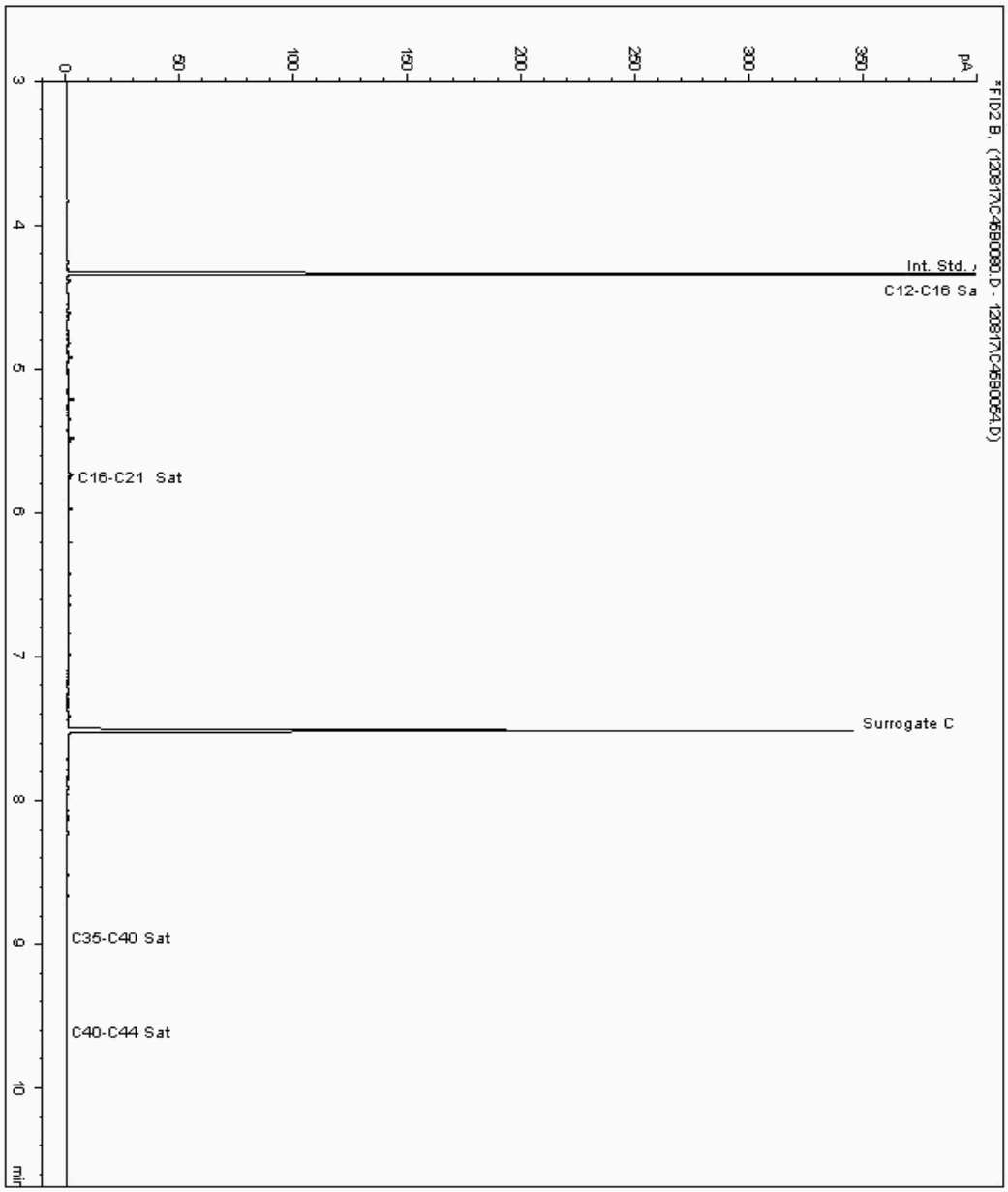
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S) **Sample No :** 16725617 **Depth :** 2.10 - 2.30
Sample ID : WS205

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682060-
Date Acquired : 12/12/2017 04:25:41 PM
Units : ppb
Dilution: WS205[2.10 - 2.30] ->



CERTIFICATE OF ANALYSIS

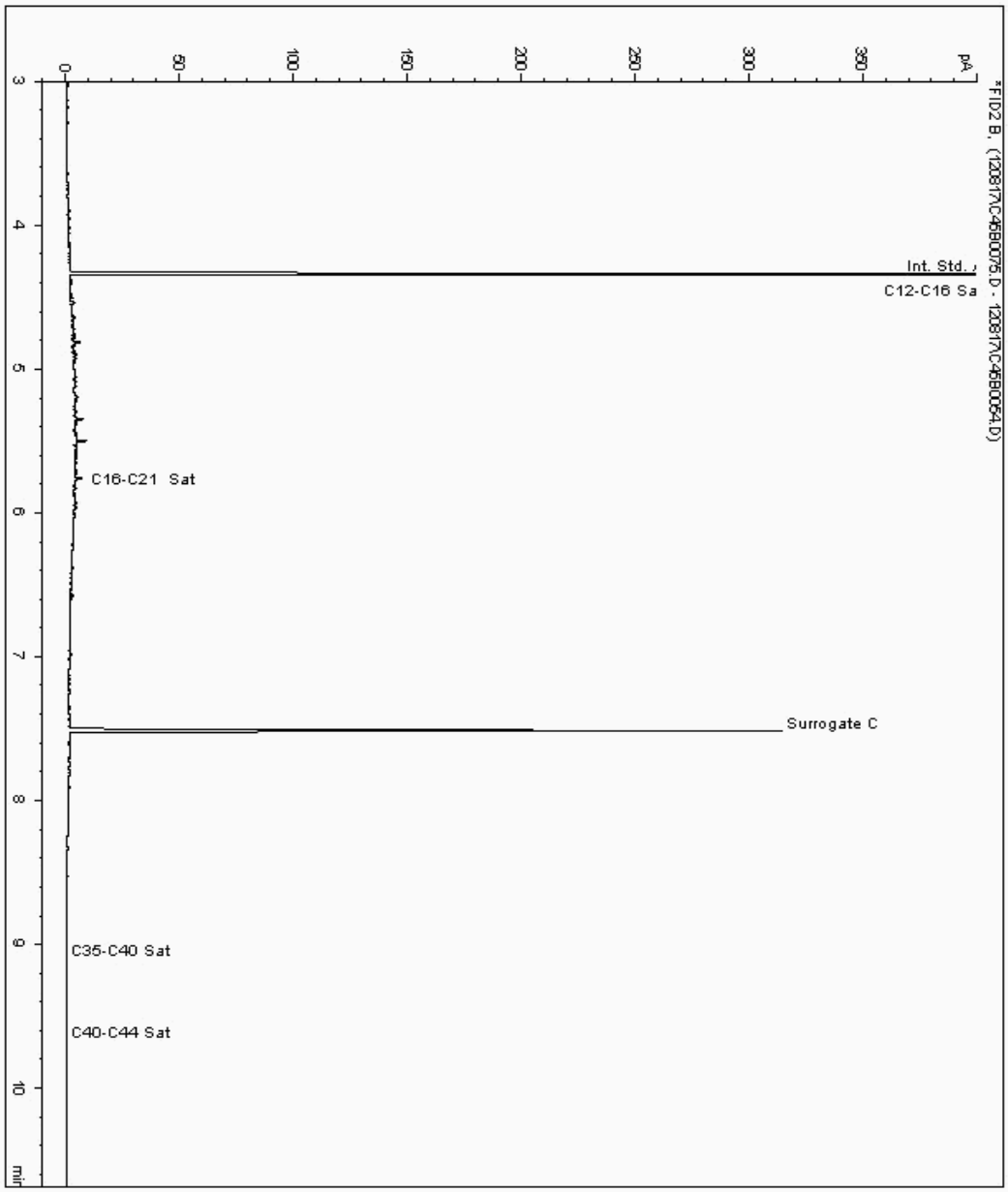
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S) **Sample No :** 16725867 **Depth :** 1.00 - 1.30
Sample ID : WS203

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682174-
Date Acquired : 12/12/2017 03:02:38 PM
Units : ppb
Dilution: WS203[1.00 - 1.30] ->



CERTIFICATE OF ANALYSIS

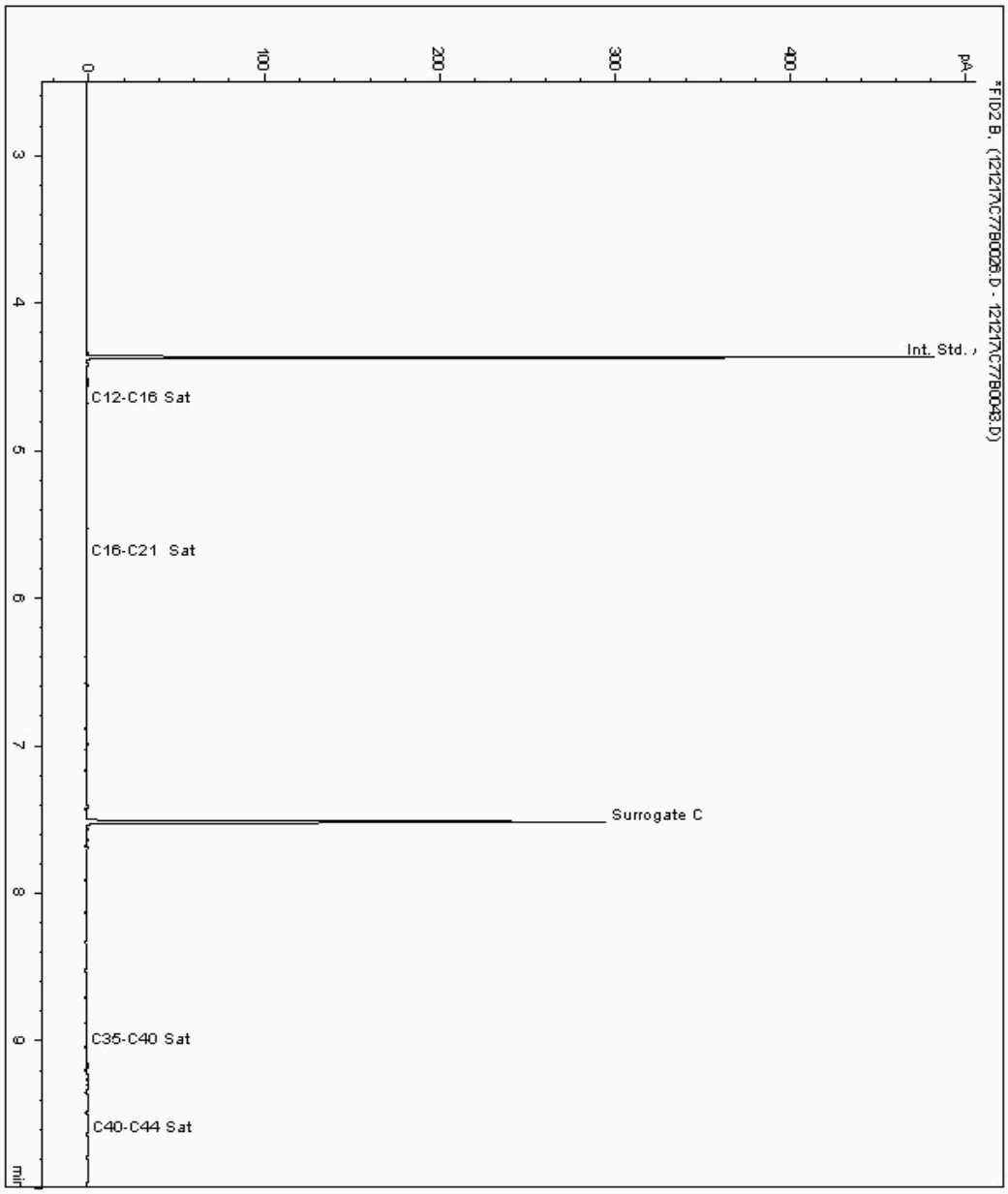
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S) **Sample No :** 16725955 **Depth :** 2.10 - 2.30
Sample ID : WS203

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 15682233-
Date Acquired : 12/12/2017 7:43:23 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.980



CERTIFICATE OF ANALYSIS

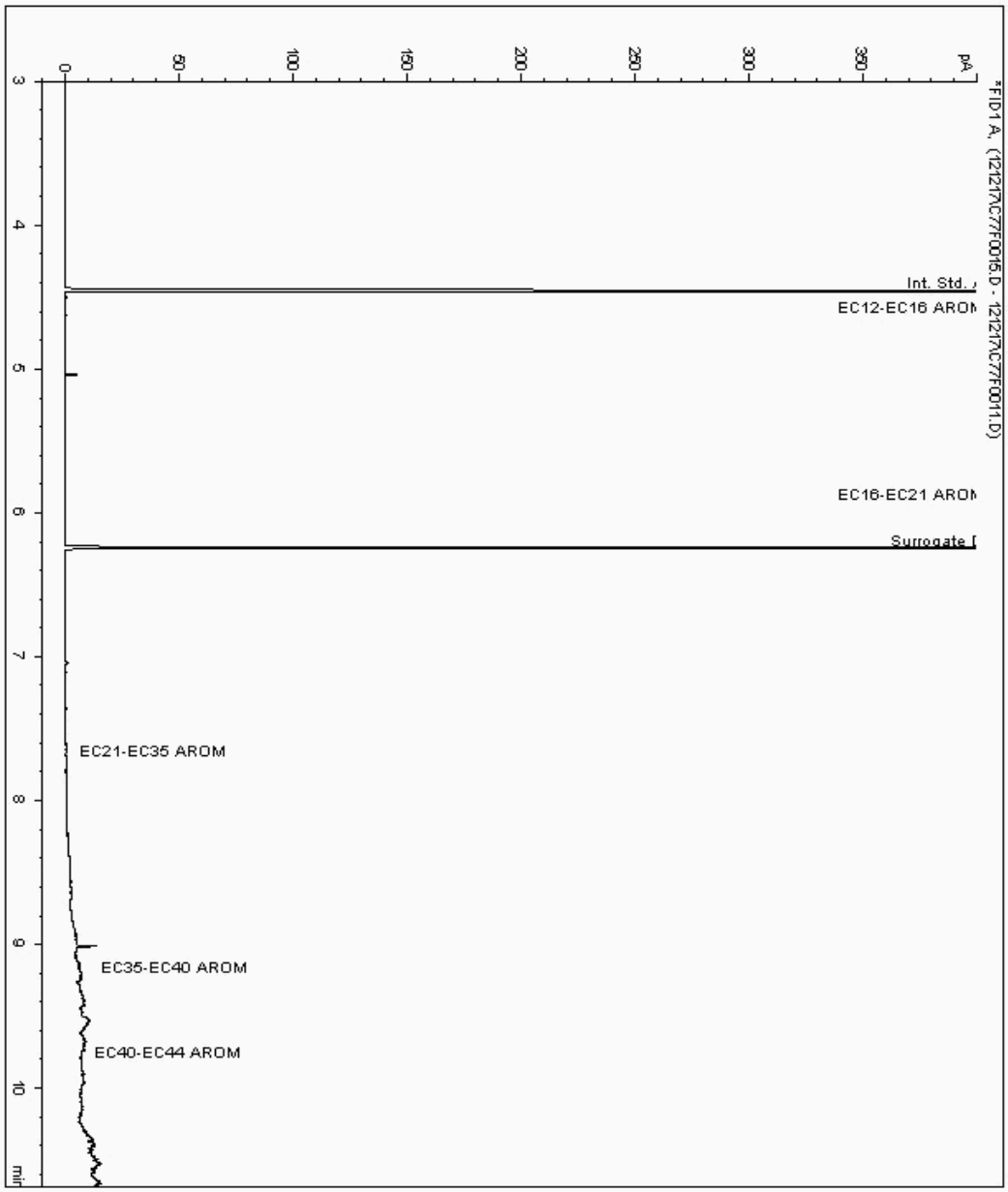
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S) **Sample No :** 16724713 **Depth :** 0.40 - 0.60
Sample ID : WS207

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682215-
Date Acquired : 12/12/2017 4:21:59 PM
Units : ppb
Dilution:



CERTIFICATE OF ANALYSIS

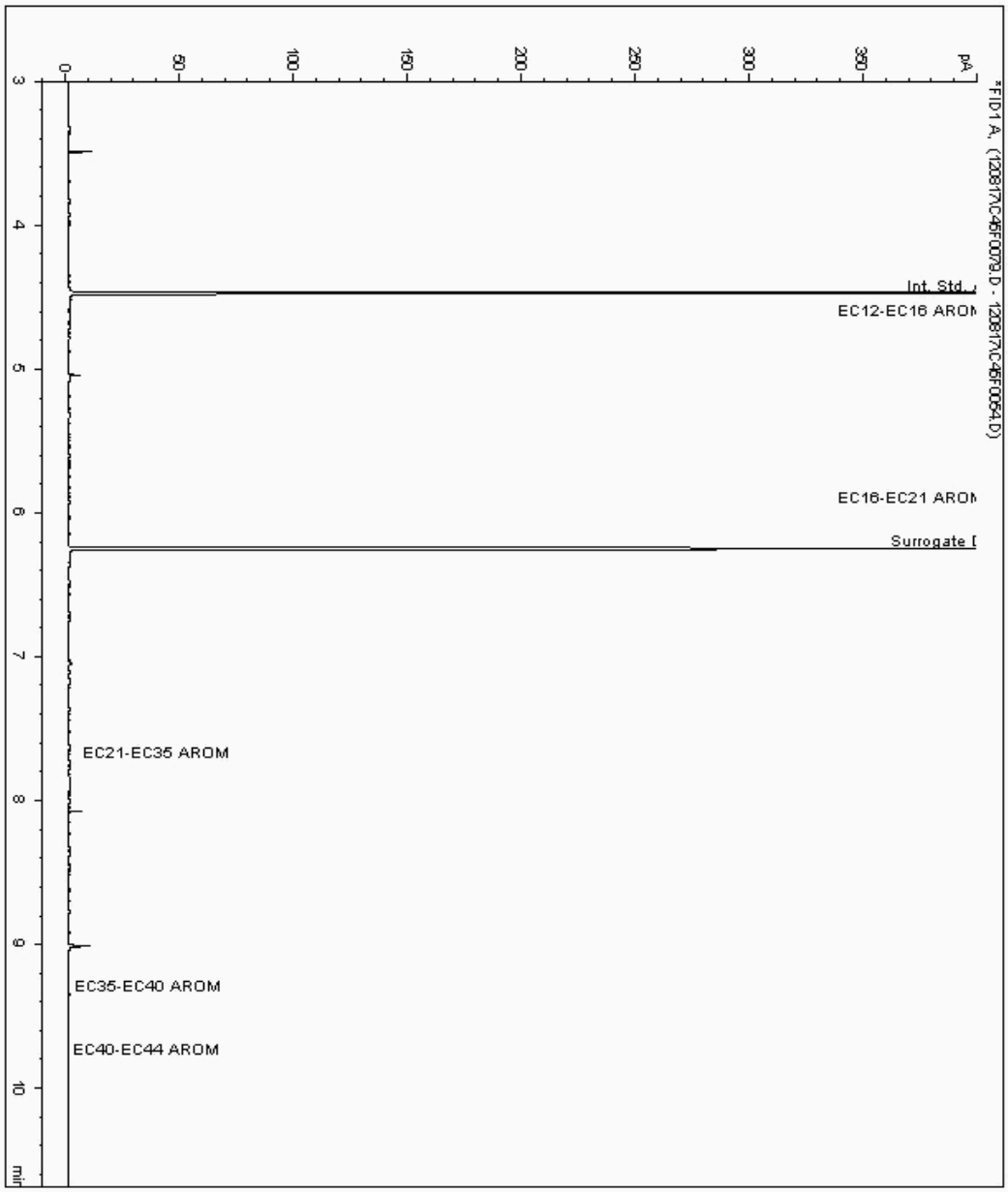
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S) **Sample No :** 16724784 **Depth :** 1.10 - 1.30
Sample ID : WS207

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682130-
Date Acquired : 12/12/2017 04:05:56 PM
Units : ppb
Dilution: WS207[1.10 - 1.30] ->



CERTIFICATE OF ANALYSIS

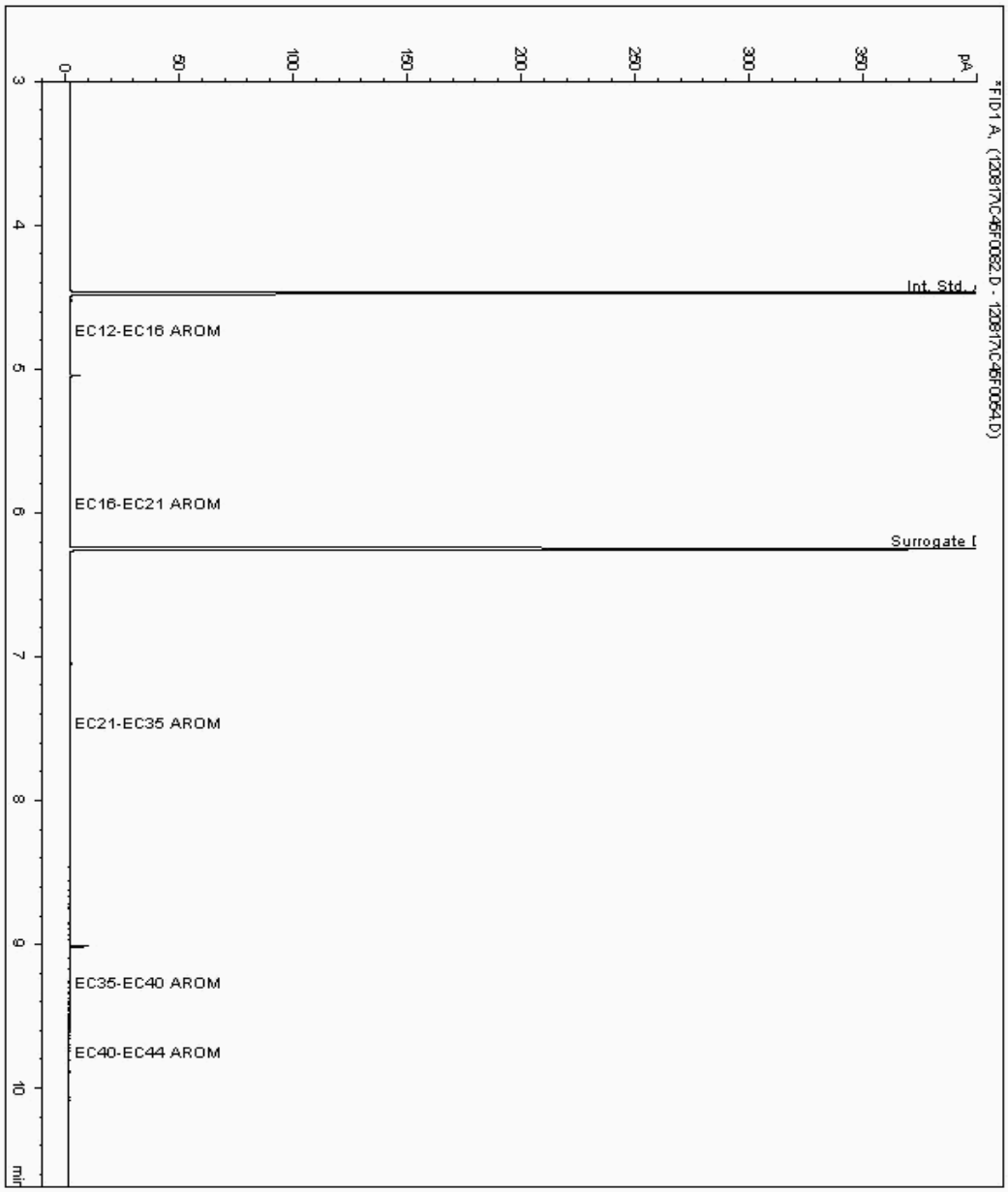
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S) **Sample No :** 16724877 **Depth :** 0.70 - 1.00
Sample ID : WS202

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682259-
Date Acquired : 12/12/2017 05:05:04 PM
Units : ppb
Dilution: WS202[0.70 - 1.00] ->



CERTIFICATE OF ANALYSIS

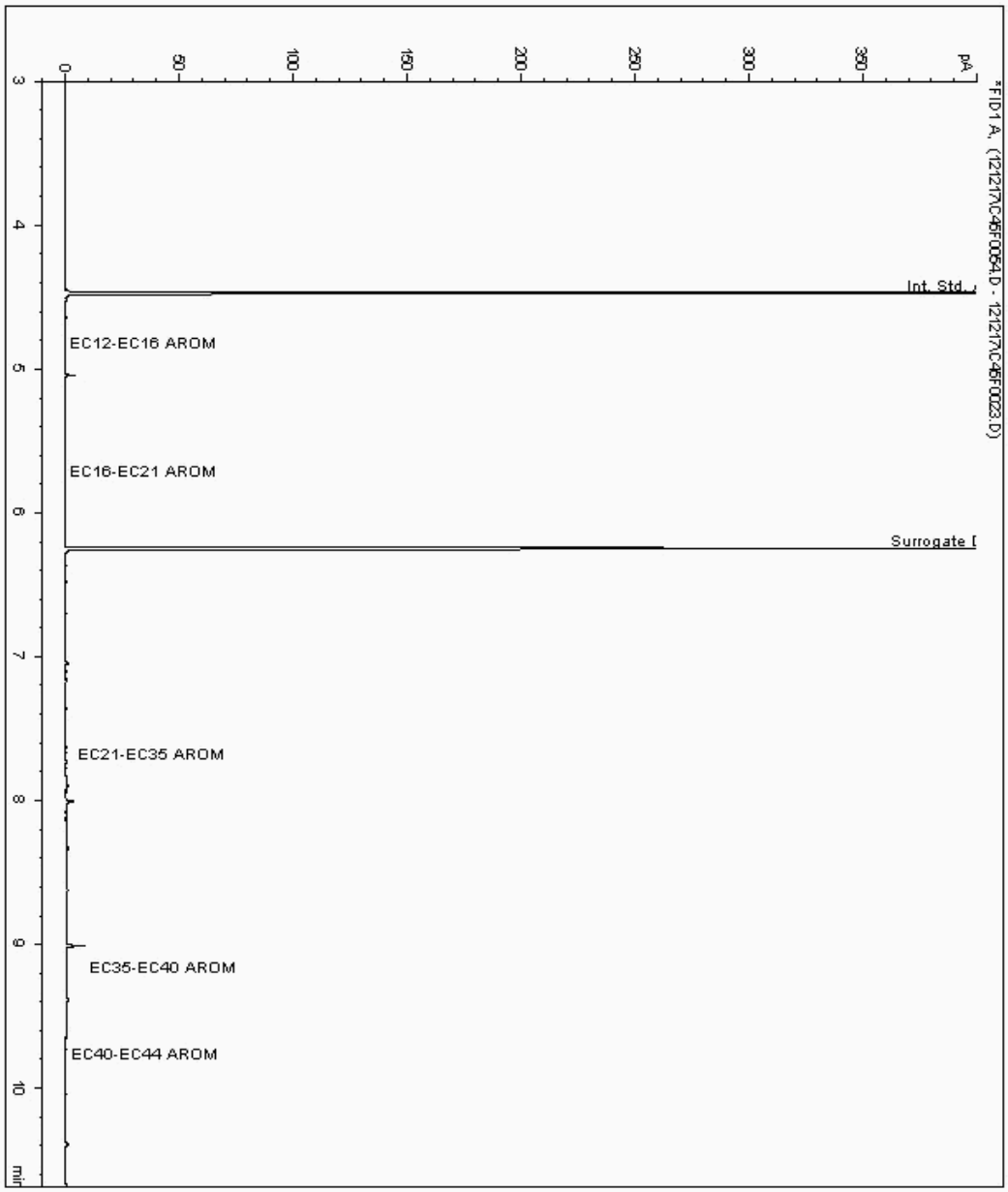
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S) **Sample No :** 16724974 **Depth :** 0.70 - 1.00
Sample ID : WS205

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682019-
Date Acquired : 13/12/2017 06:51:24 PM
Units : ppb
Dilution: WS205[0.70 - 1.00] ->



CERTIFICATE OF ANALYSIS

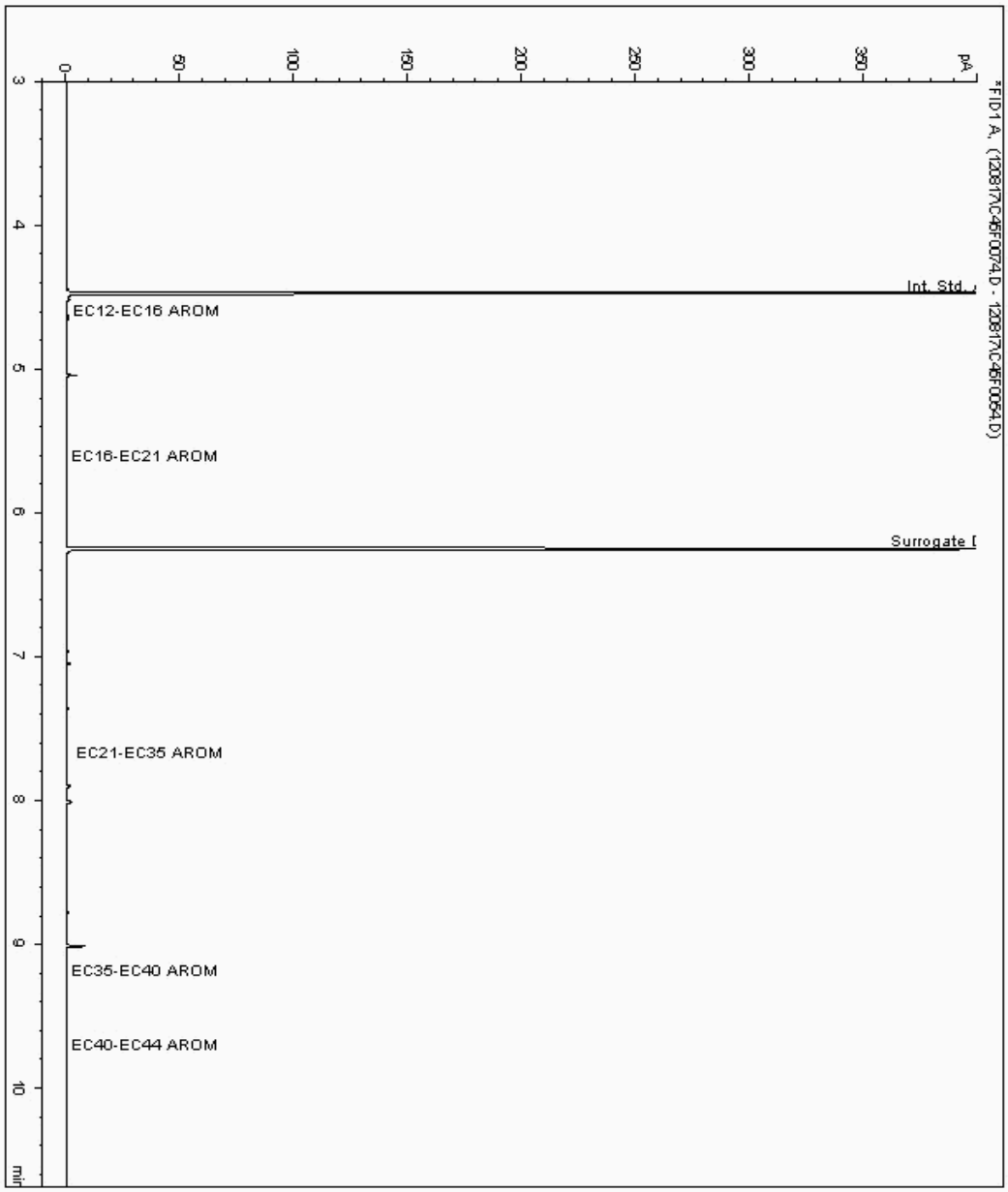
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S) **Sample No :** 16725482 **Depth :** 3.50 - 3.70
Sample ID : WS205

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682075-
Date Acquired : 12/12/2017 02:42:35 PM
Units : ppb
Dilution: WS205[3.50 - 3.70] ->



CERTIFICATE OF ANALYSIS

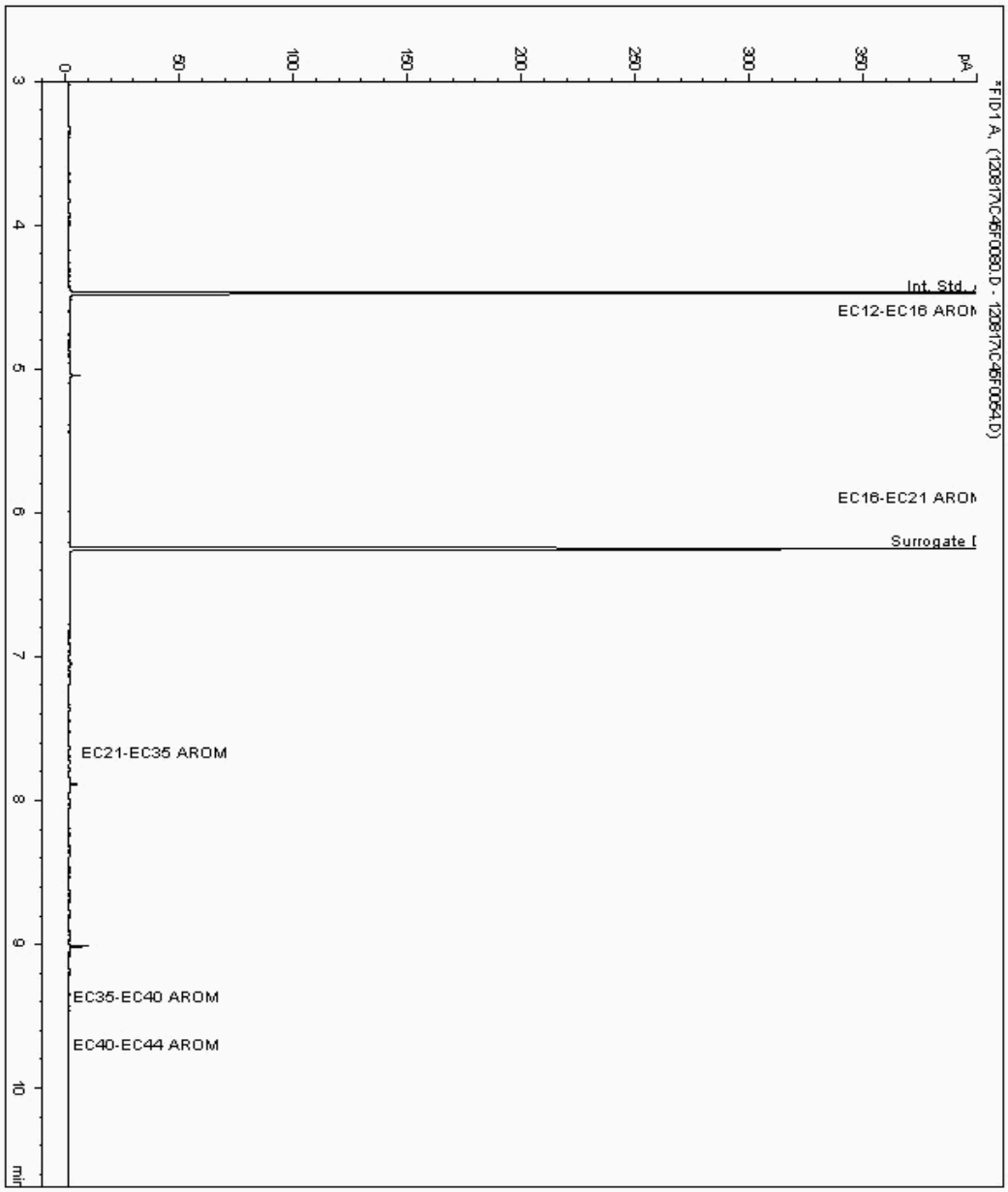
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S) **Sample No :** 16725617 **Depth :** 2.10 - 2.30
Sample ID : WS205

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682061-
Date Acquired : 12/12/2017 04:25:41 PM
Units : ppb
Dilution: WS205[2.10 - 2.30] ->



CERTIFICATE OF ANALYSIS

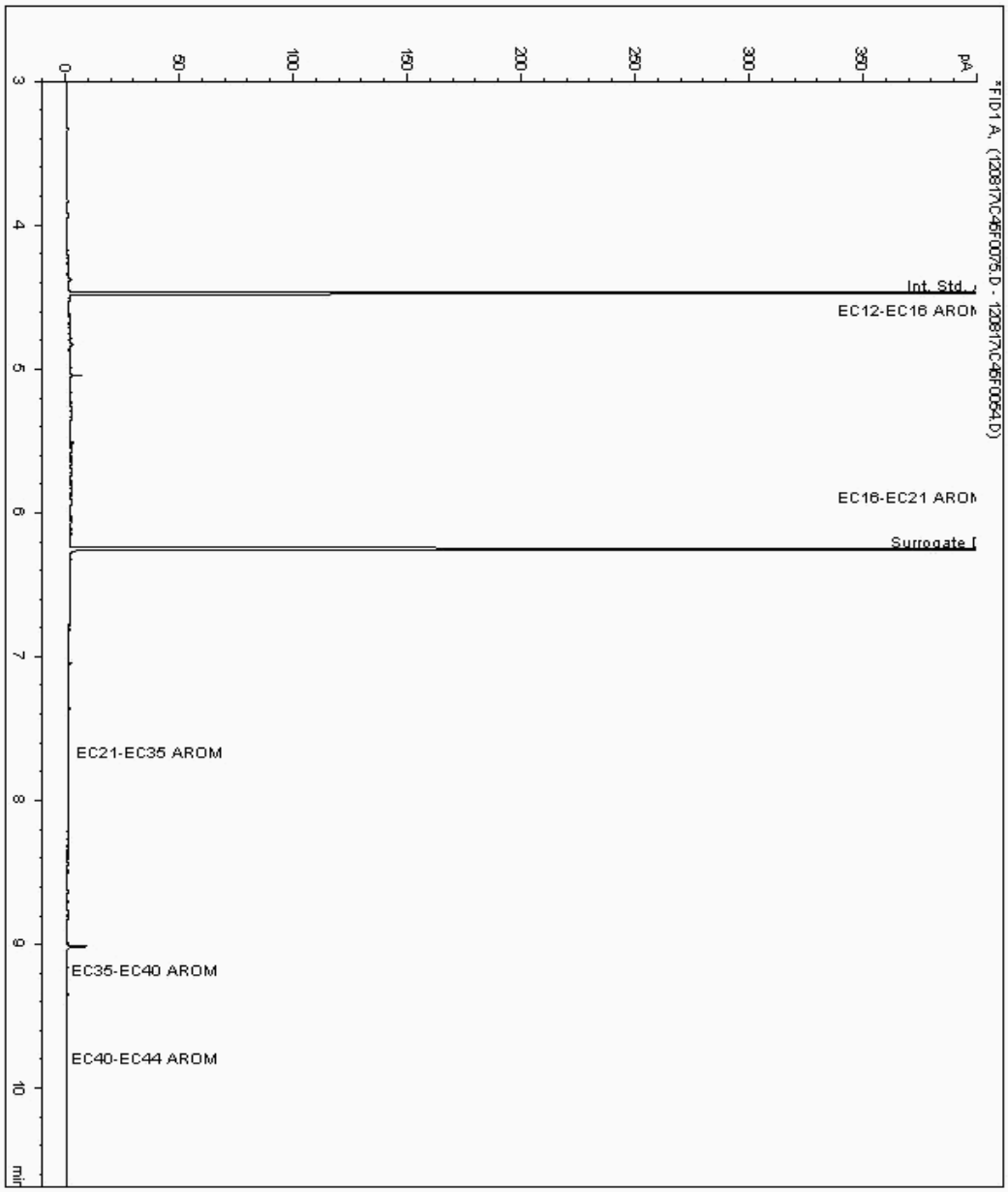
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S) **Sample No :** 16725867 **Depth :** 1.00 - 1.30
Sample ID : WS203

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682175-
Date Acquired : 12/12/2017 03:02:38 PM
Units : ppb
Dilution: WS203[1.00 - 1.30] ->



CERTIFICATE OF ANALYSIS

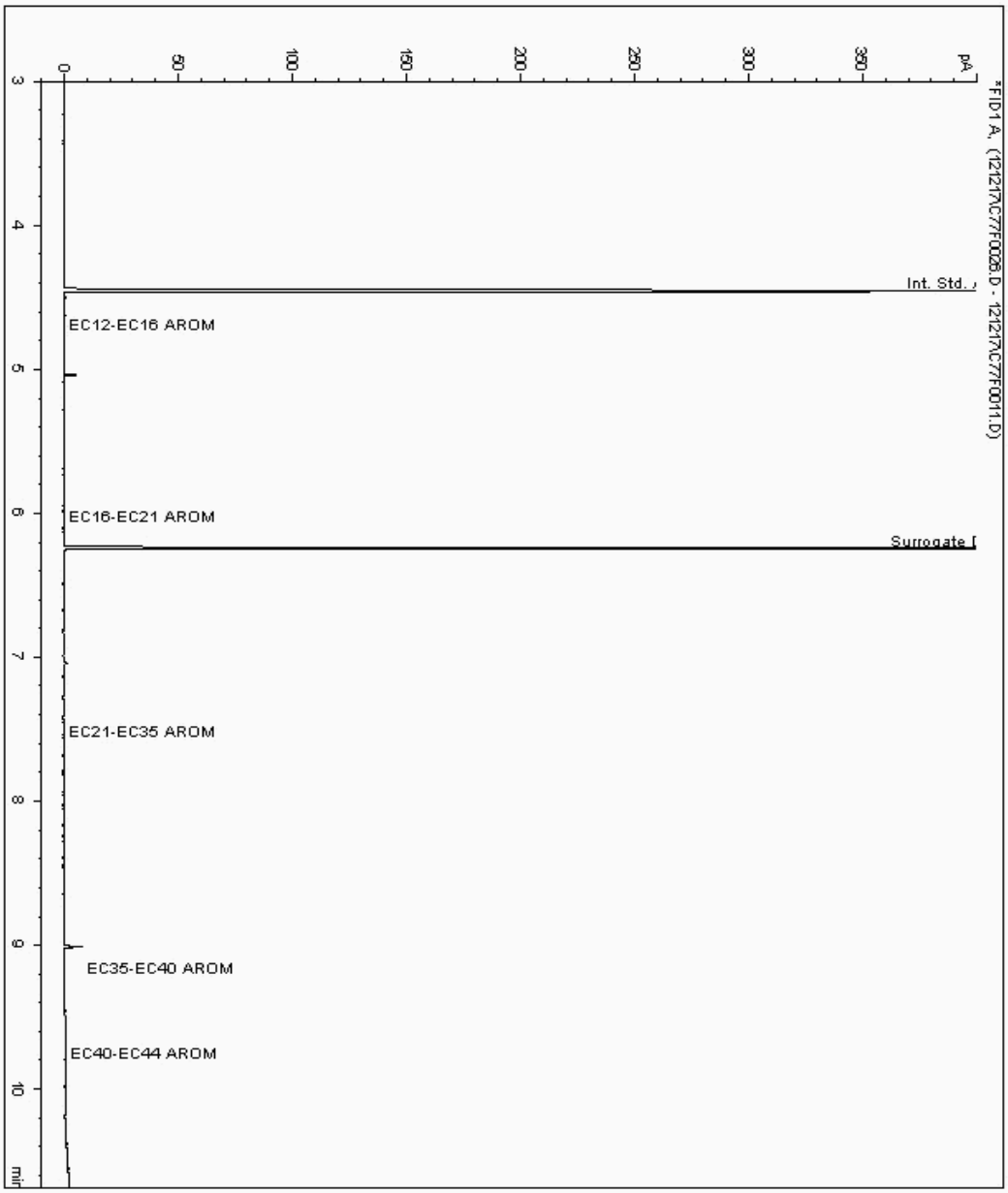
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S) **Sample No :** 16725955 **Depth :** 2.10 - 2.30
Sample ID : WS203

Speciated TPH - AROM (C12 - C40)

Sample Identity: 15682234-
Date Acquired : 12/12/2017 7:43:23 PM
Units : ppb
Dilution:



CERTIFICATE OF ANALYSIS

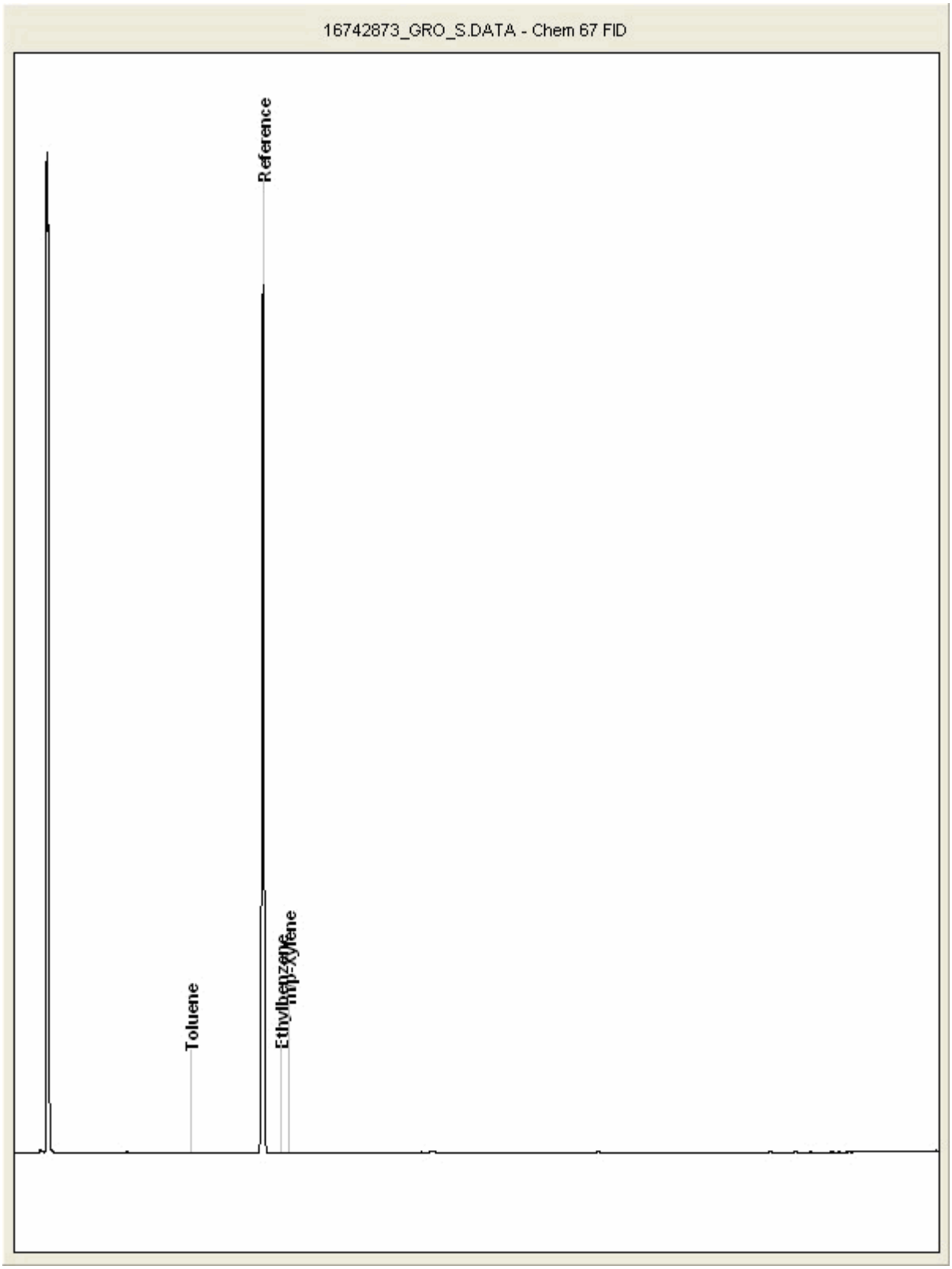
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 16742873
Sample ID : WS207

Depth : 1.10 - 1.30



CERTIFICATE OF ANALYSIS

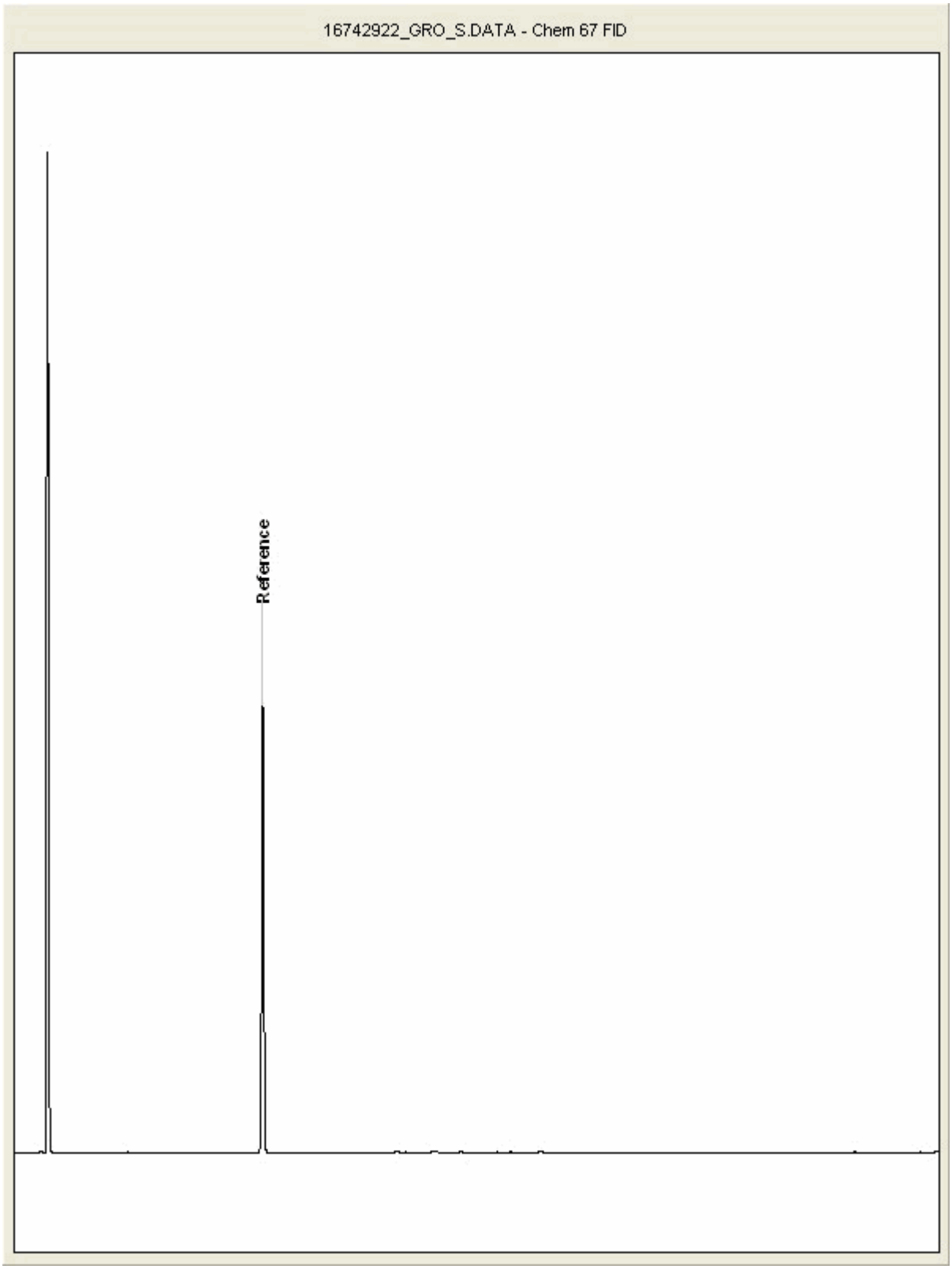
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 16742922
Sample ID : WS203

Depth : 2.10 - 2.30



CERTIFICATE OF ANALYSIS

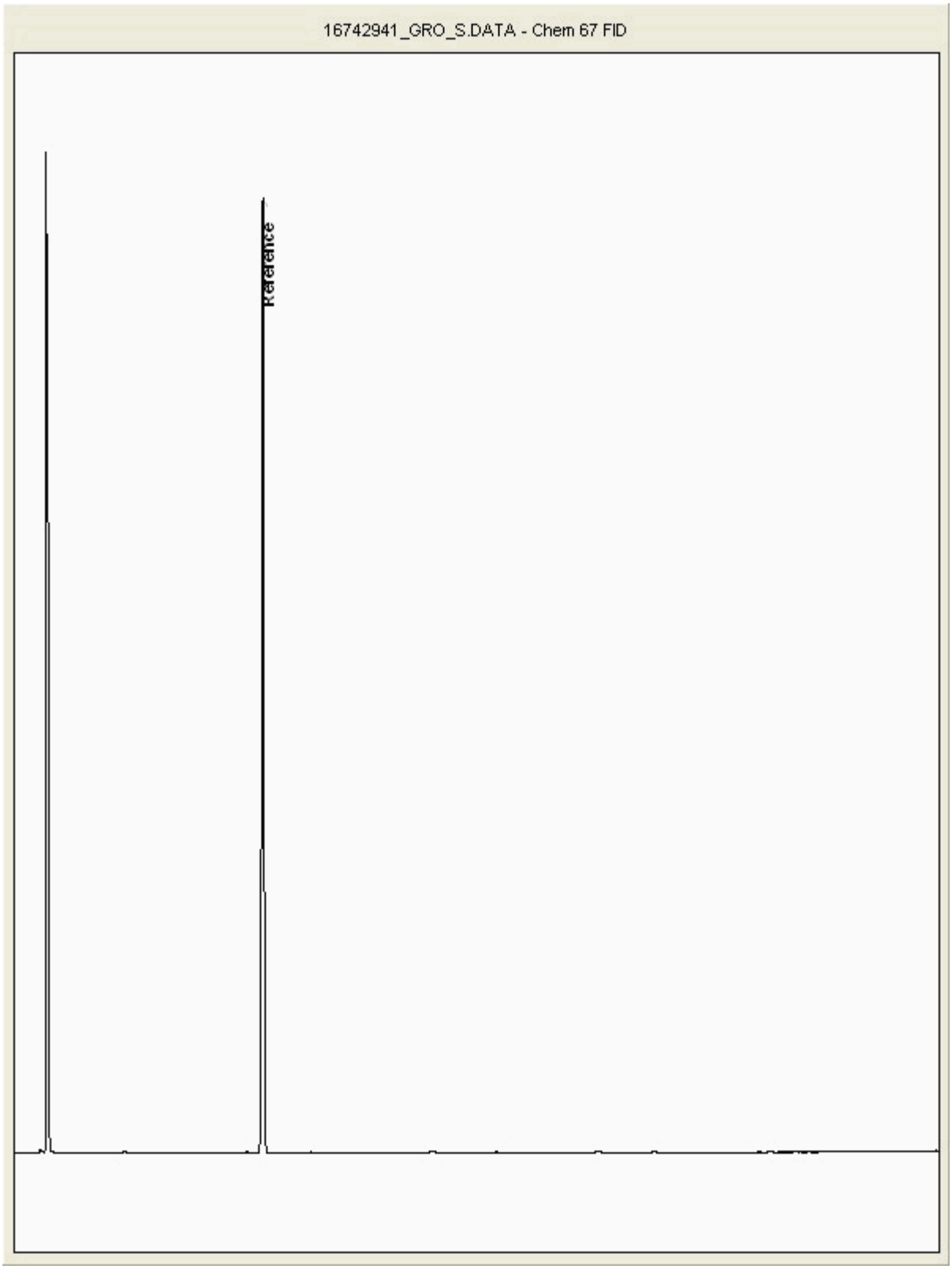
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 16742941
Sample ID : WS207

Depth : 0.40 - 0.60



CERTIFICATE OF ANALYSIS

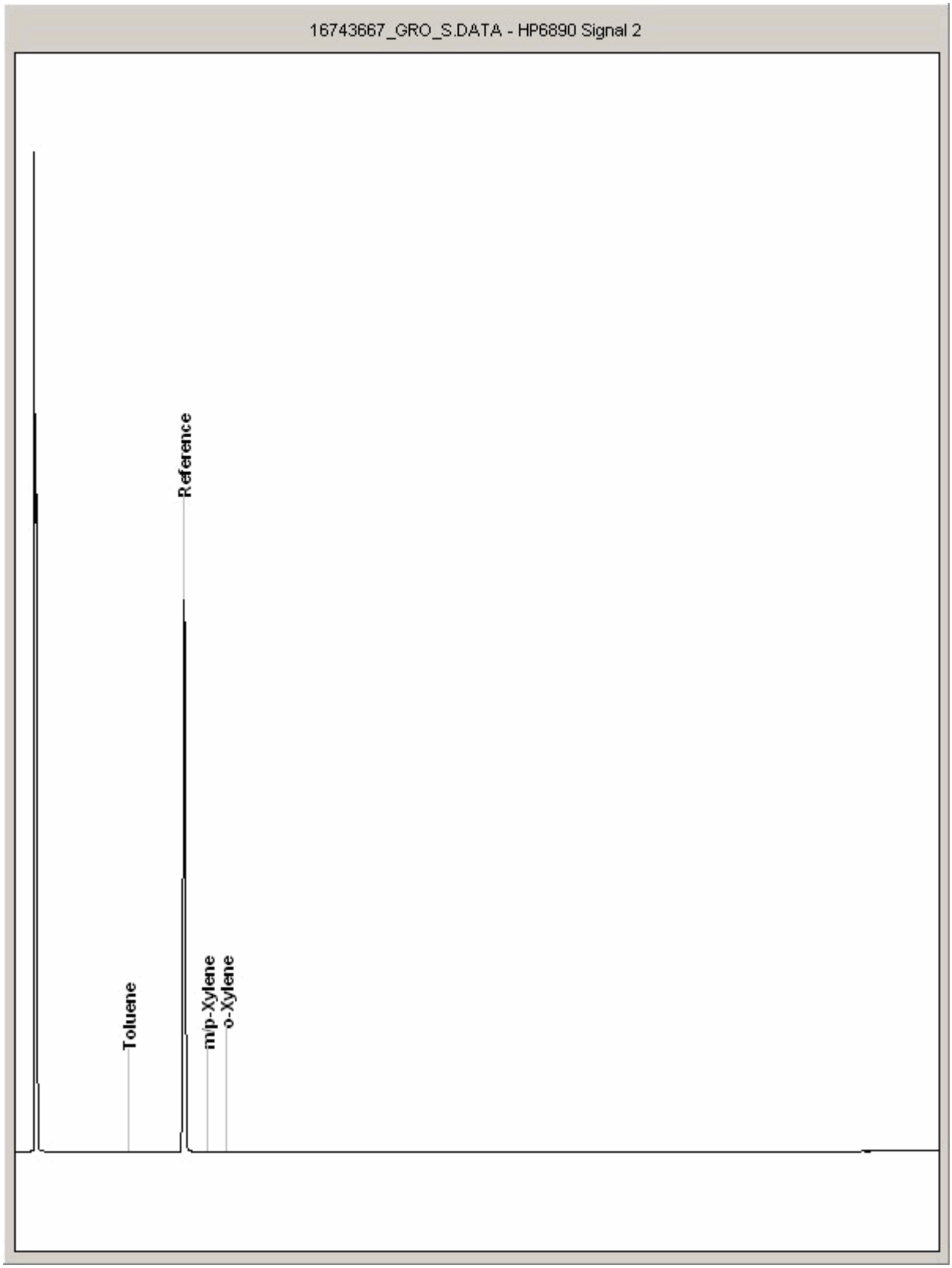
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 16743667
Sample ID : WS205

Depth : 0.70 - 1.00



CERTIFICATE OF ANALYSIS

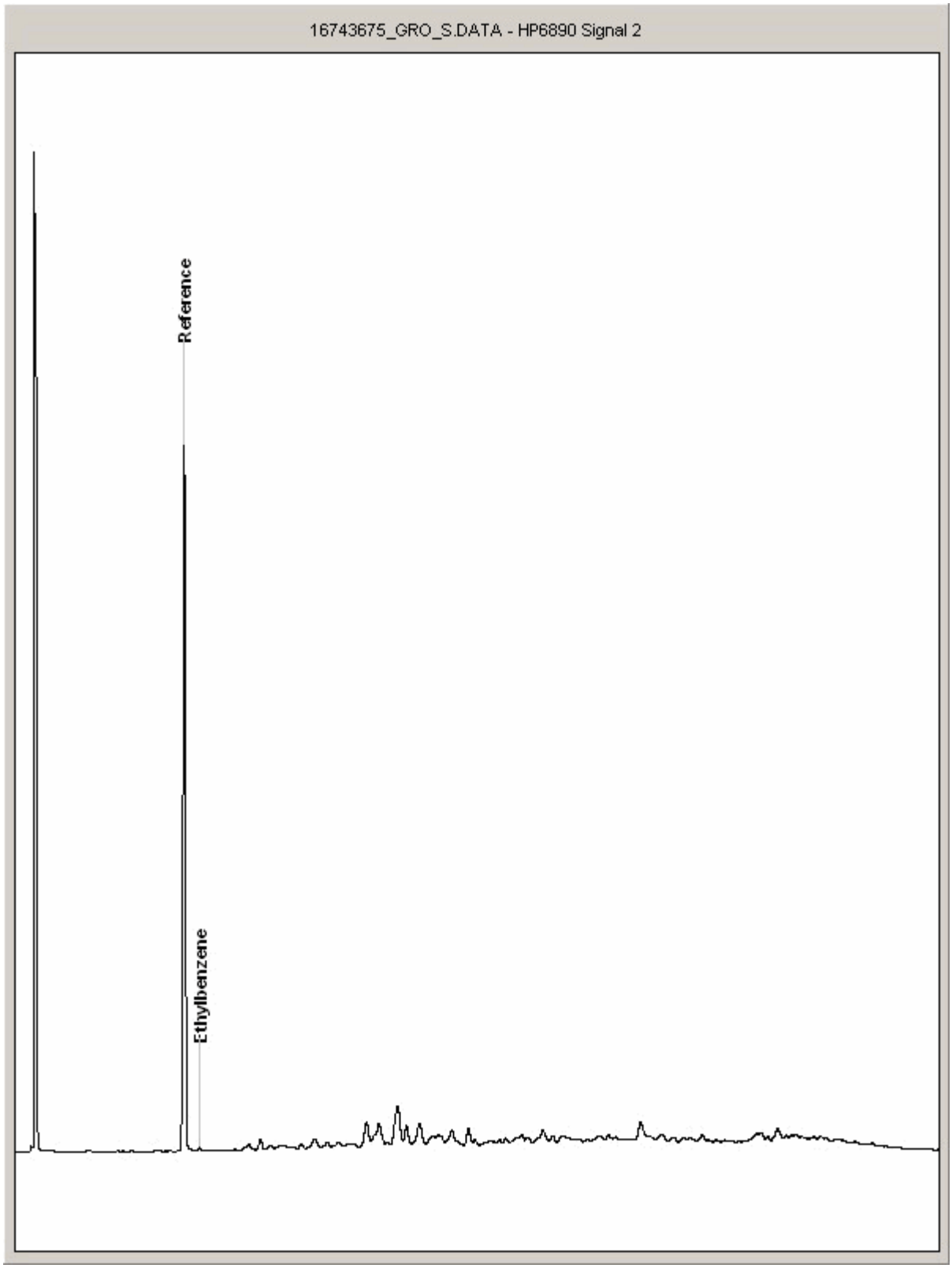
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 16743675
Sample ID : WS203

Depth : 1.00 - 1.30



CERTIFICATE OF ANALYSIS

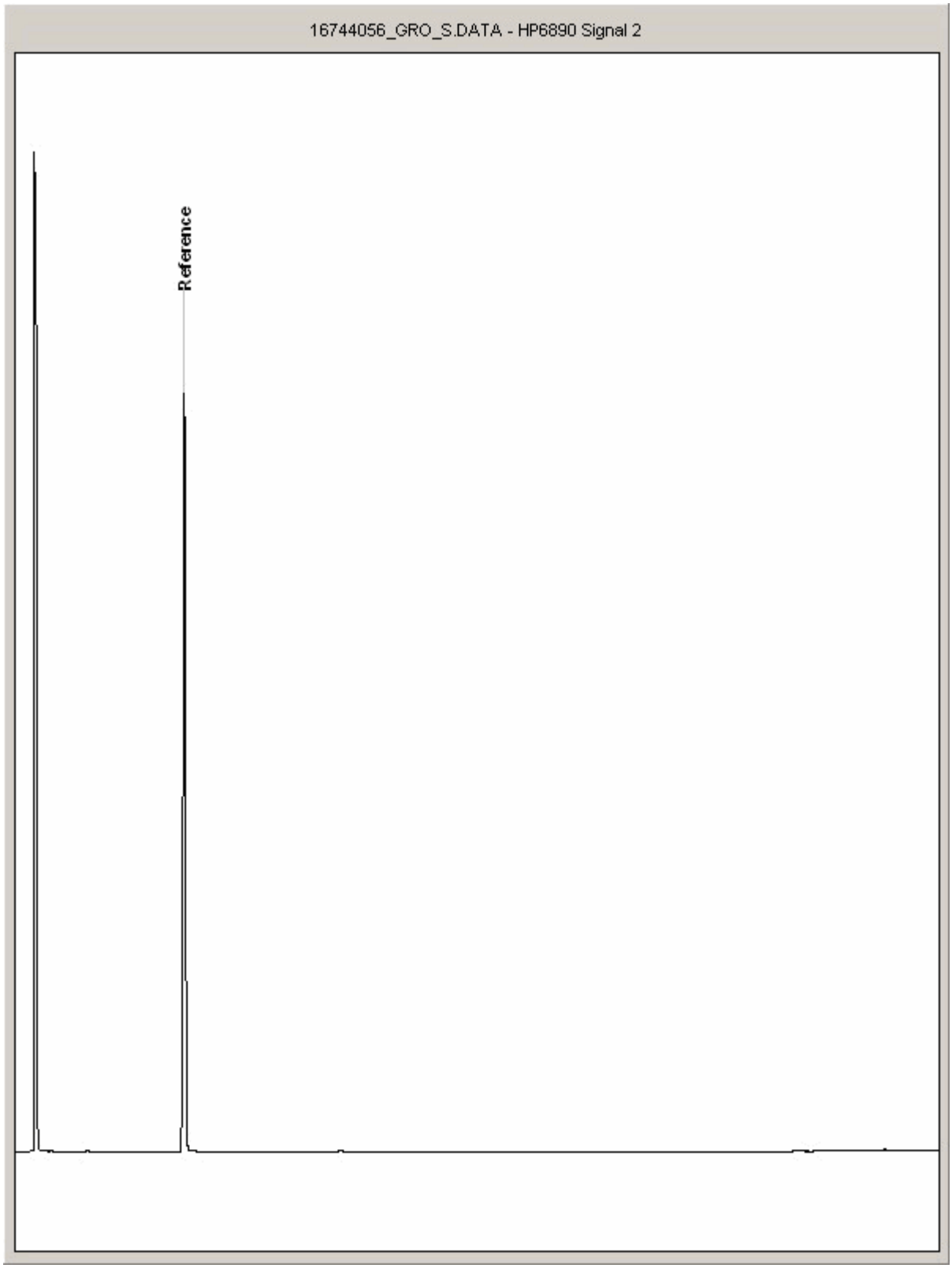
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 16744056
Sample ID : WS205

Depth : 2.10 - 2.30



CERTIFICATE OF ANALYSIS

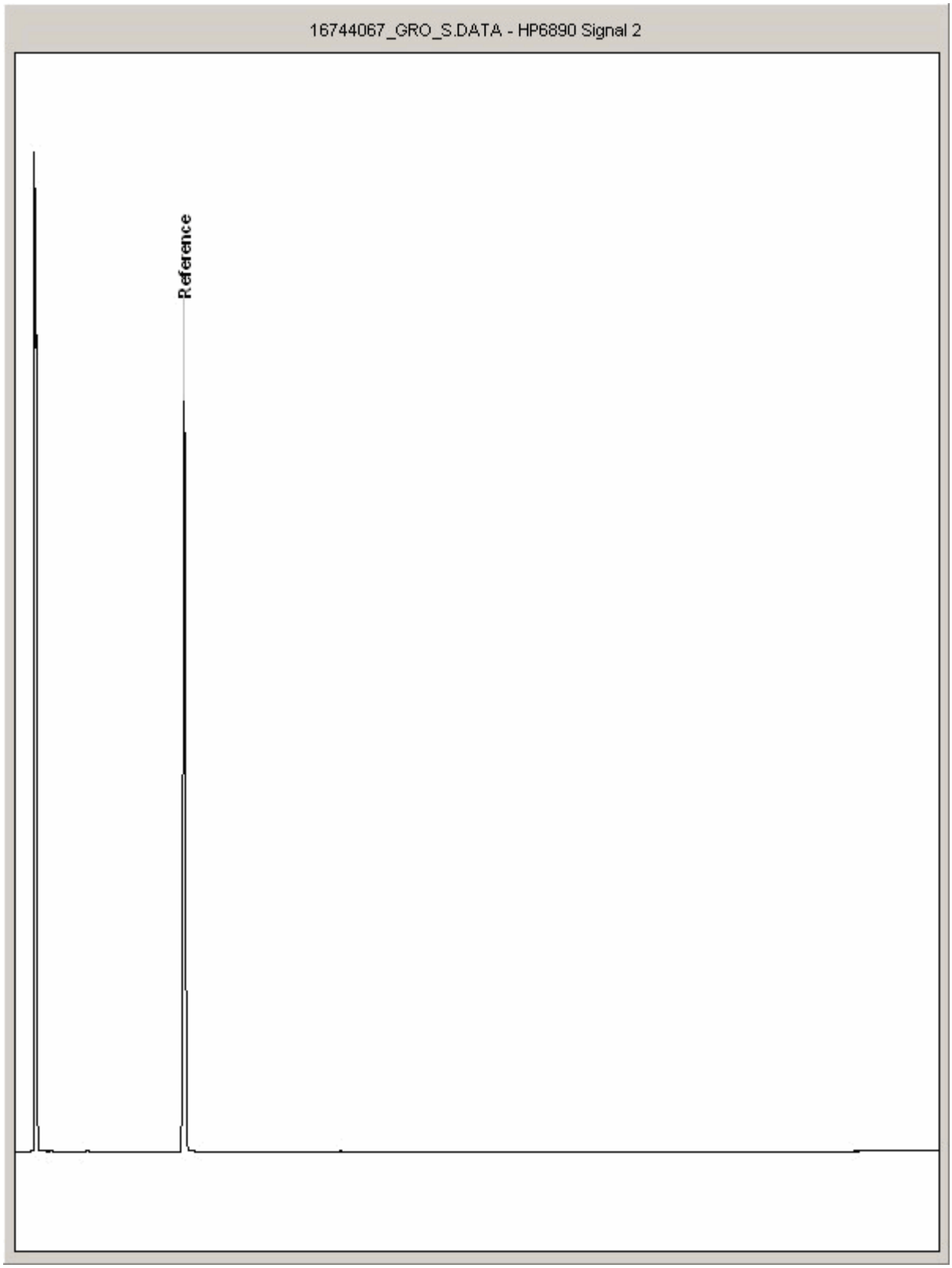
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 16744067
Sample ID : WS202

Depth : 0.70 - 1.00



CERTIFICATE OF ANALYSIS

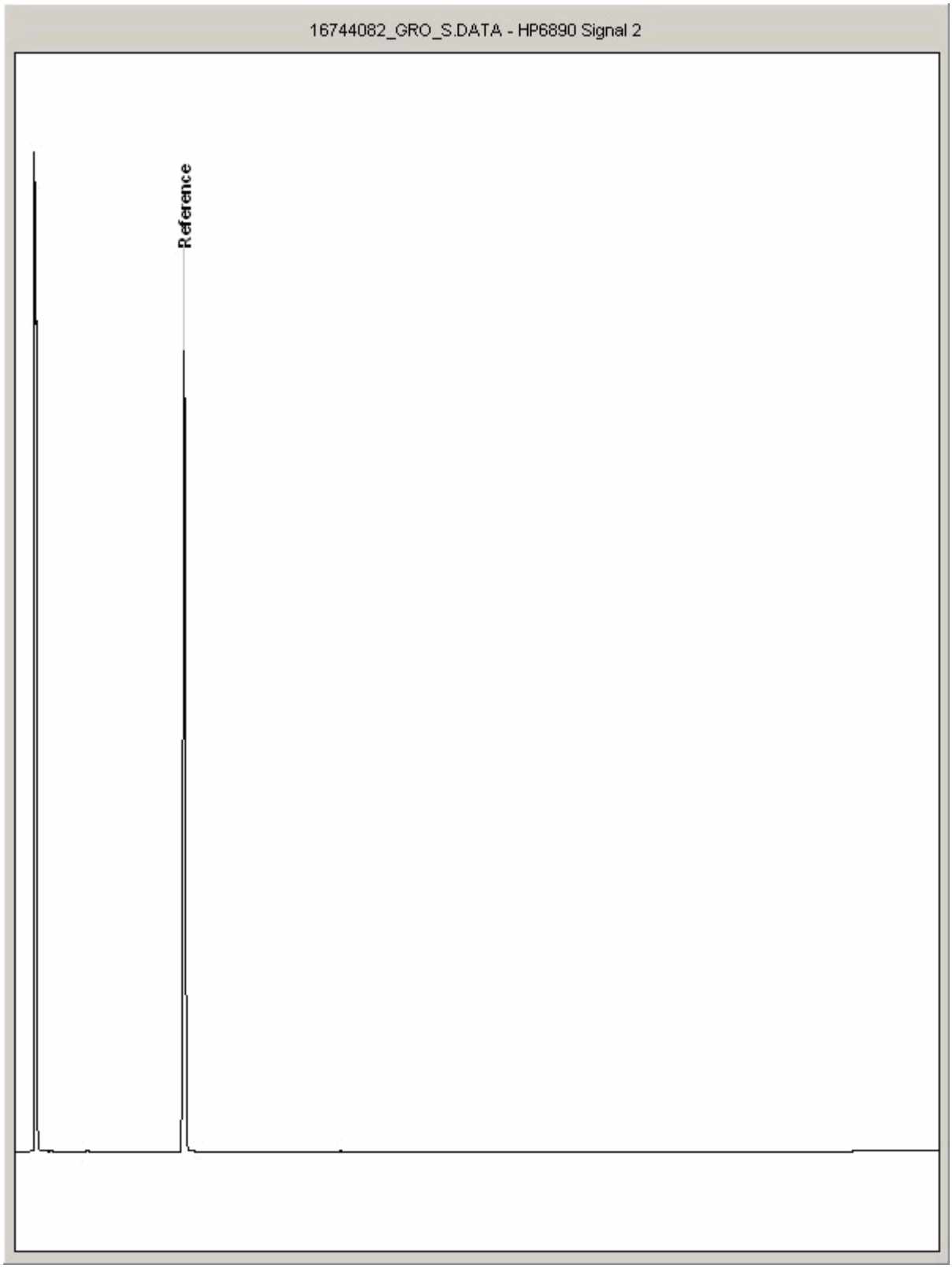
SDG:	171208-120	**Client Reference:**	70041591	**Report Number:**	437139
Location:	Kraft, Banbury	**Order Number:**	70041591-SO1	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 16744082
Sample ID : WS205

Depth : 3.50 - 3.70



Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

WSP PB MLN
The Victoria
150-182 The Quays
Salford
Manchester
Lancashire
M50 3SP

Attention: Stephen Jones

CERTIFICATE OF ANALYSIS

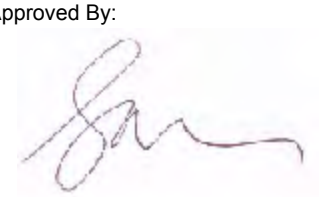
Date:	03 January 2018
Customer:	H_WSP_MAN
Sample Delivery Group (SDG):	171219-19
Your Reference:	70041591
Location:	Kraft, Banbury
Report No:	438677

We received 4 samples on Tuesday December 19, 2017 and 3 of these samples were scheduled for analysis which was completed on Wednesday January 03, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
16785921	NO ID			
16785900	WS202	EW	0.00 - 0.00	15/12/2017
16785908	WS205	EW	0.00 - 0.00	15/12/2017
16785914	WS207	EW	0.00 - 0.00	15/12/2017

Maximum Sample/Coolbox Temperature (°C) : **6.4**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)			16785900			16785908			16785914		
			Customer Sample Reference			WS202			WS205			WS207		
			AGS Reference			EW			EW			EW		
			Depth (m)			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00		
			Container			1000ml glass bottle (ALE220)	1lplastic (ALE221)	Vial (ALE297)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	Vial (ALE297)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	Vial (ALE297)
			Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	GW
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3					X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3				X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3				X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 3						X			X			X
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 3					X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 3				X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 3				X			X			X		
pH Value	All	NDPs: 0 Tests: 3					X			X			X	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2				X			X					
TPH CWG (W)	All	NDPs: 0 Tests: 3				X			X			X		
VOC MS (W)	All	NDPs: 0 Tests: 3						X			X			X

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS205	WS207			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)			
			Date Sampled	15/12/2017	15/12/2017	15/12/2017			
			Sampled Time	.	.	.			
			Date Received	19/12/2017	19/12/2017	19/12/2017			
			SDG Ref	171219-19	171219-19	171219-19			
			Lab Sample No.(s)	16785900	16785908	16785914			
			AGS Reference	EW	EW	EW			
Arsenic (diss.filt)	<0.5 µg/l	TM152		1.33 #	1.19 #	0.716 #			
Barium (diss.filt)	<0.2 µg/l	TM152		47.1 #	10.6 #	15 #			
Beryllium (diss.filt)	<0.1 µg/l	TM152		<0.1 #	<0.1 #	<0.1 #			
Boron (diss.filt)	<5 µg/l	TM152		49.1 #	45.2 #	68.3 #			
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 #	<0.08 #	<0.08 #			
Chromium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #			
Copper (diss.filt)	<0.3 µg/l	TM152		<0.3 #	<0.3 #	<0.3 #			
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 #	1.28 #	<0.2 #			
Nickel (diss.filt)	<0.4 µg/l	TM152		5.49 #	0.584 #	1.62 #			
Selenium (diss.filt)	<0.5 µg/l	TM152		43.1 #	1.46 #	11.6 #			
Vanadium (diss.filt)	<1 µg/l	TM152		3.19 #	<1 #	<1 #			
Zinc (diss.filt)	<1 µg/l	TM152		2.34 #	<1 #	1.52 #			
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 @#	<0.01 @#	<0.01 @#			
pH	<1 pH Units	TM256		7.3 #	7.46 #	7.08 #			
Low Level Hexavalent Chromium	<3 µg/l	TM331		<3	<3	<3			

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

PAH Spec MS - Aqueous (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS205	WS207			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)			
			Date Sampled	15/12/2017	15/12/2017	15/12/2017			
			Sampled Time	.	.	.			
			Date Received	19/12/2017	19/12/2017	19/12/2017			
			SDG Ref	171219-19	171219-19	171219-19			
			Lab Sample No.(s)	16785900	16785908	16785914			
			AGS Reference	EW	EW	EW			
Naphthalene (aq)	<0.01 µg/l	TM178		<0.01	<0.01	<0.01			
Acenaphthene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	<0.005			
Acenaphthylene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	<0.005			
Fluoranthene (aq)	<0.005 µg/l	TM178		0.0146	<0.005	<0.005			
Anthracene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	<0.005			
Phenanthrene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	<0.005			
Fluorene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	<0.005			
Chrysene (aq)	<0.005 µg/l	TM178		0.00953	<0.005	<0.005			
Pyrene (aq)	<0.005 µg/l	TM178		0.0237	<0.005	<0.005			
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178		0.00724	<0.005	<0.005			
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178		0.0185	<0.005	<0.005			
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	<0.005			
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178		0.00805	<0.002	<0.002			
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	<0.005			
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178		0.0101	<0.005	<0.005			
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	<0.005			
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178		0.0918	<0.082	<0.082			

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS205				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Ground Water (GW)	Ground Water (GW)				
			Date Sampled	15/12/2017	15/12/2017				
			Sampled Time	.	.				
			Date Received	19/12/2017	19/12/2017				
			SDG Ref	171219-19	171219-19				
			Lab Sample No.(s)	16785900	16785908				
			AGS Reference	EW	EW				
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2-Chlorophenol (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2-Methylphenol (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2-Nitroaniline (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
2-Nitrophenol (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
3-Nitroaniline (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1				
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
4-Methylphenol (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
4-Nitroaniline (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1				
Azobenzene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Acenaphthylene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Acenaphthene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Anthracene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2 @ #	<2 @ #				
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS205				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Ground Water (GW)	Ground Water (GW)				
			Date Sampled	15/12/2017	15/12/2017				
			Sampled Time	.	.				
			Date Received	19/12/2017	19/12/2017				
			SDG Ref	171219-19	171219-19				
			Lab Sample No.(s)	16785900	16785908				
			AGS Reference	EW	EW				
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Carbazole (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Chrysene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Dibenzofuran (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Diethyl phthalate (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Dimethyl phthalate (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<5 @ #	<5 @ #				
Fluoranthene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Fluorene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Hexachlorobenzene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Pentachlorophenol (aq)	<1 µg/l	TM176		<1	<1				
Phenol (aq)	<1 µg/l	TM176		<1	<1				
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Hexachloroethane (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Nitrobenzene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Naphthalene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Isophorone (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<1	<1				
Phenanthrene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				
Pyrene (aq)	<1 µg/l	TM176		<1 @ #	<1 @ #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

TPH CWG (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS205	WS207			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)			
			Date Sampled	15/12/2017	15/12/2017	15/12/2017			
			Sampled Time	.	.	.			
			Date Received	19/12/2017	19/12/2017	19/12/2017			
			SDG Ref	171219-19	171219-19	171219-19			
			Lab Sample No.(s)	16785900	16785908	16785914			
			AGS Reference	EW	EW	EW			
GRO Surrogate % recovery**	%	TM245		93	97	97			
GRO >C5-C12	<50 µg/l	TM245		<50 #	<50 #	<50 #			
Aliphatics >C5-C6	<10 µg/l	TM245		<10	<10	<10			
Aliphatics >C6-C8	<10 µg/l	TM245		<10	<10	<10			
Aliphatics >C8-C10	<10 µg/l	TM245		<10	<10	<10			
Aliphatics >C10-C12	<10 µg/l	TM245		<10	<10	<10			
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174		<10	<10	<10			
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174		<10	<10	<10			
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174		<10	<10	<10			
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174		<10	<10	<10			
Aromatics >EC5-EC7	<10 µg/l	TM245		<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/l	TM245		<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/l	TM245		<10	<10	<10			
Aromatics >EC10-EC12	<10 µg/l	TM245		<10	<10	<10			
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174		<10	<10	<10			
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174		<10	<10	<10			
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174		<10	<10	<10			
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174		<10	<10	<10			
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174		<10	<10	<10			
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174		<10	<10	<10			
Aromatics >EC16-EC35 (aq)	<10 µg/l	TM174		<10	<10	<10			

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS205	WS207			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)			
			Date Sampled	15/12/2017	15/12/2017	15/12/2017			
			Sampled Time	.	.	.			
			Date Received	19/12/2017	19/12/2017	19/12/2017			
			SDG Ref	171219-19	171219-19	171219-19			
			Lab Sample No.(s)	16785900	16785908	16785914			
			AGS Reference	EW	EW	EW			
Dibromofluoromethane**	%	TM208		104	106				
Toluene-d8**	%	TM208		98.4	98.9				
4-Bromofluorobenzene**	%	TM208		98.5	97.3				
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #				
Chloromethane	<1 µg/l	TM208		<1 #	<1 #				
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #				
Bromomethane	<1 µg/l	TM208		<1 #	<1 #				
Chloroethane	<1 µg/l	TM208		<1 #	<1 #				
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #				
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #				
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #				
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #			
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #				
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #				
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1				
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #				
Chloroform	<1 µg/l	TM208		<1 #	<1 #				
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #				
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #				
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #				
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #				
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #				

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS205	WS207			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)			
			Date Sampled	15/12/2017	15/12/2017	15/12/2017			
			Sampled Time	.	.	.			
			Date Received	19/12/2017	19/12/2017	19/12/2017			
			SDG Ref	171219-19	171219-19	171219-19			
			Lab Sample No.(s)	16785900	16785908	16785914			
			AGS Reference	EW	EW	EW			
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #				
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #				
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #				
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #				
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Styrene	<1 µg/l	TM208		<1 #	<1 #				
Bromoform	<1 µg/l	TM208		<1 #	<1 #				
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #				
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #				
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #				
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #				
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #				
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #				
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #				
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #				
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #				
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #				
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #				
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #				
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1				
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #				
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Naphthalene	<1 µg/l	TM208		<1 #	<1 #				

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS202	WS205	WS207			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)			
			Date Sampled	15/12/2017	15/12/2017	15/12/2017			
			Sampled Time	.	.	.			
			Date Received	19/12/2017	19/12/2017	19/12/2017			
			SDG Ref	171219-19	171219-19	171219-19			
			Lab Sample No.(s)	16785900	16785908	16785914			
			AGS Reference	EW	EW	EW			
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1				
VOC TIC	-	TM208		Not Detected	Not Detected				
Sum of detected Xylenes	<2 µg/l	TM208		<2	<2	<2			
Total VOC TIC	<10 µg/l	TM208		0	0				

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	16785900	16785908	16785914
Customer Sample Ref.	WS202	WS205	WS207
AGS Ref.	EW	EW	EW
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water
Dissolved Metals by ICP-MS	29-Dec-2017	29-Dec-2017	29-Dec-2017
EPH CWG (Aliphatic) Aqueous GC (W)	28-Dec-2017	28-Dec-2017	28-Dec-2017
EPH CWG (Aromatic) Aqueous GC (W)	28-Dec-2017	28-Dec-2017	28-Dec-2017
GRO by GC-FID (W)	22-Dec-2017	22-Dec-2017	22-Dec-2017
Low Level Hexavalent Chromium (w)	28-Dec-2017	28-Dec-2017	28-Dec-2017
Mercury Dissolved	03-Jan-2018	03-Jan-2018	03-Jan-2018
PAH Spec MS - Aqueous (W)	28-Dec-2017	28-Dec-2017	28-Dec-2017
pH Value	27-Dec-2017	27-Dec-2017	27-Dec-2017
SVOC MS (W) - Aqueous	28-Dec-2017	28-Dec-2017	
TPH CWG (W)	28-Dec-2017	28-Dec-2017	28-Dec-2017
VOC MS (W)	22-Dec-2017	22-Dec-2017	22-Dec-2017

CERTIFICATE OF ANALYSIS

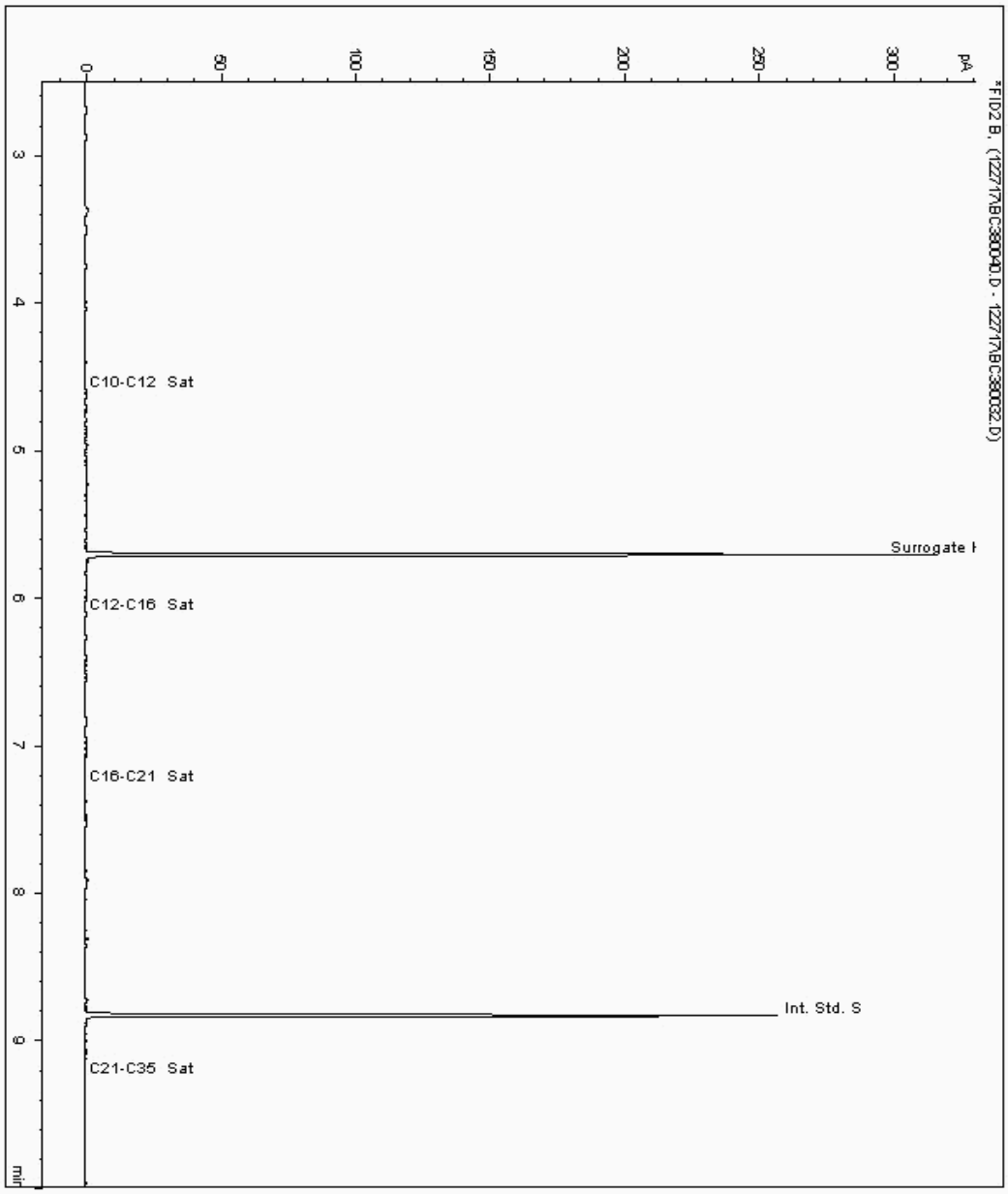
SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) Aqueous GC (W) **Sample No :** 16786722 **Depth :** 0.00 - 0.00
Sample ID : WS207

Speciated TPH - SATS (C12 - C40)

Sample Identity: 15744796-
Date Acquired : 28/12/17 10:30:35 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.025



CERTIFICATE OF ANALYSIS

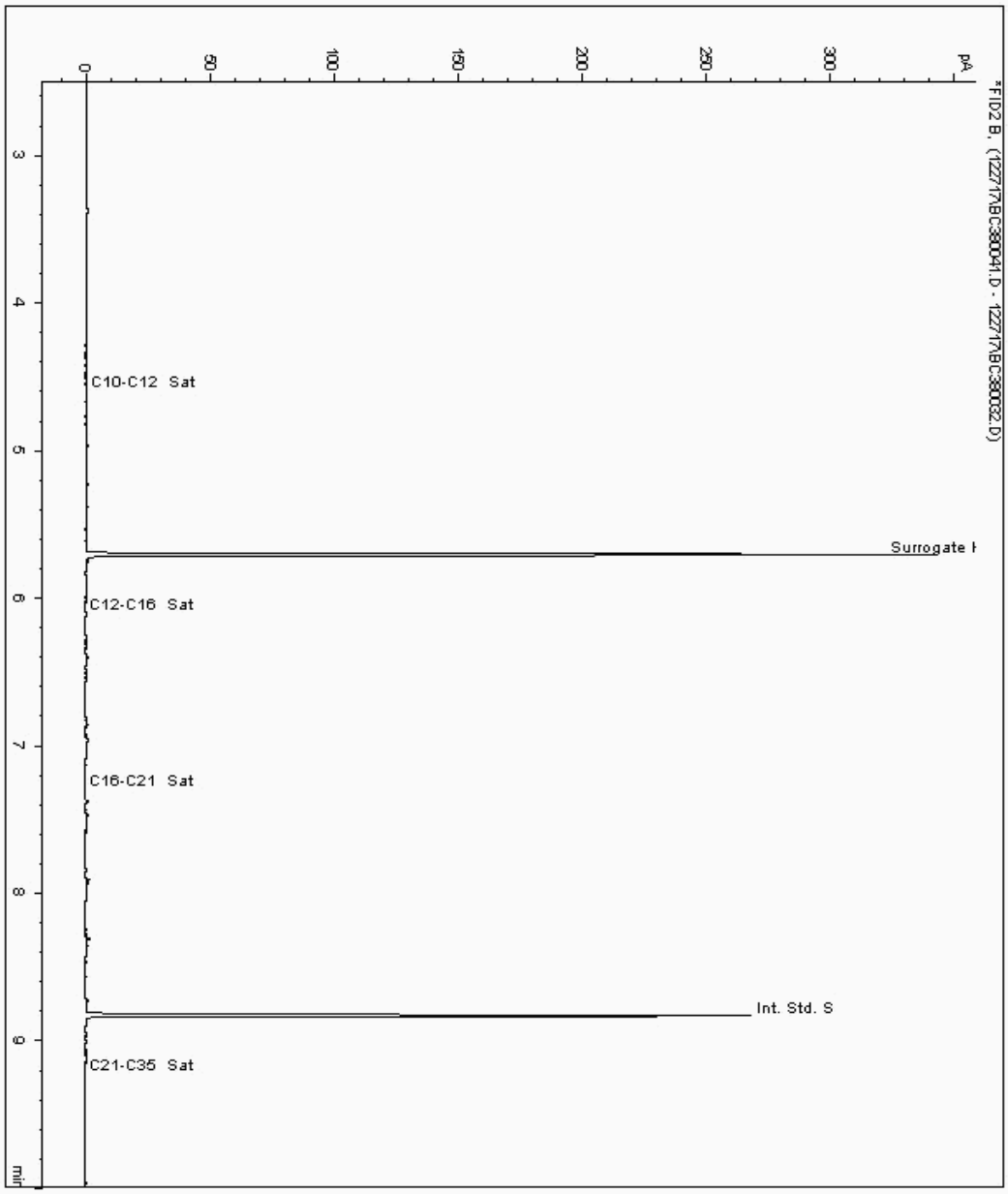
SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) Aqueous GC (W) **Sample No :** 16786812 **Depth :** 0.00 - 0.00
Sample ID : WS205

Speciated TPH - SATS (C12 - C40)

Sample Identity: 15744784-
Date Acquired : 28/12/17 10:52:28 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.025



CERTIFICATE OF ANALYSIS

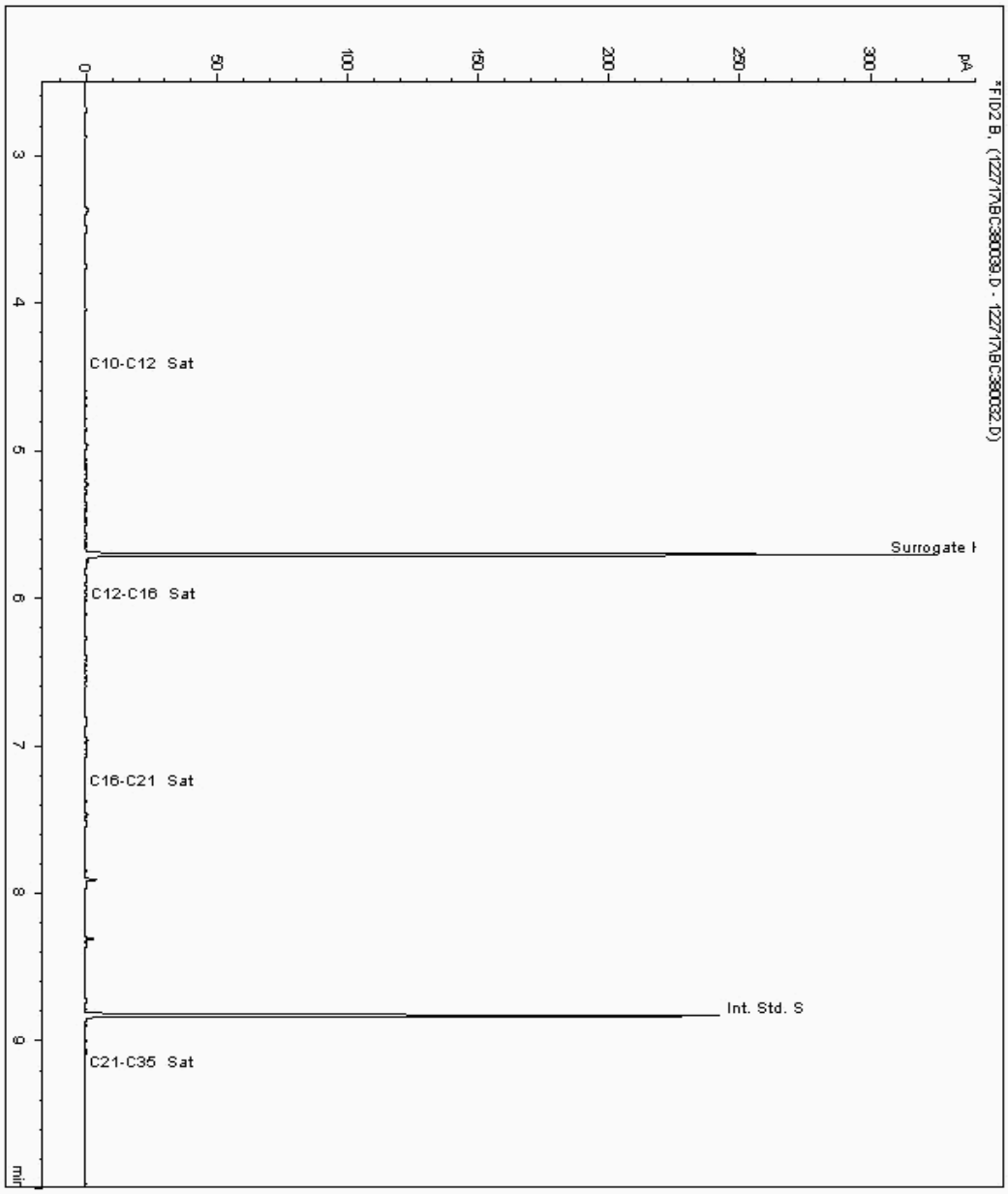
SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aliphatic) Aqueous GC (W) **Sample No :** 16786828 **Sample ID :** WS202 **Depth :** 0.00 - 0.00

Speciated TPH - SATS (C12 - C40)

Sample Identity: 15744771-
Date Acquired : 28/12/17 10:09:05 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.025



CERTIFICATE OF ANALYSIS

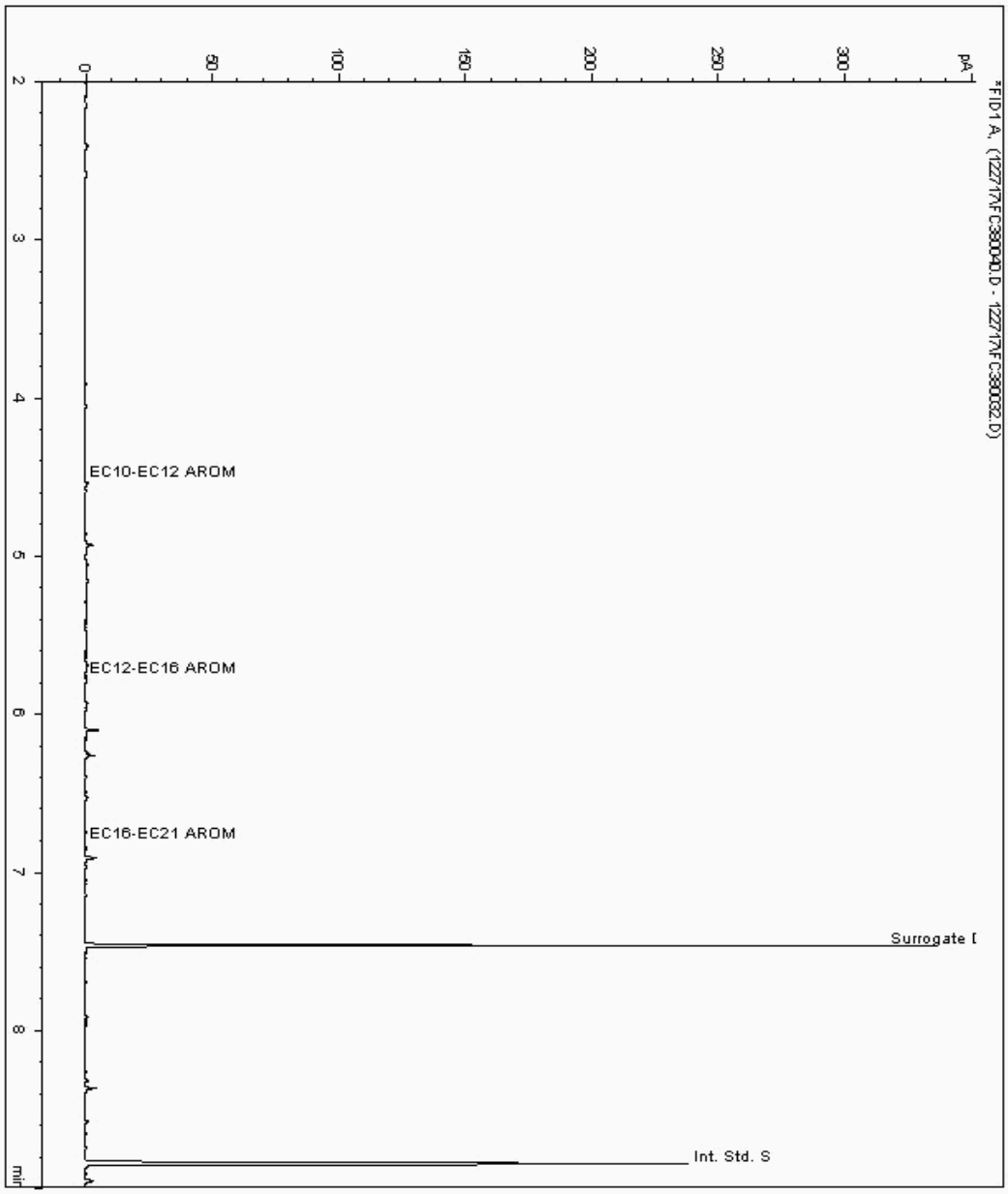
SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) Aqueous GC (W) **Sample No :** 16786722 **Sample ID :** WS207 **Depth :** 0.00 - 0.00

Alcontrol/Geochem Analytical Services
EPH Range Organics (C10 - C40)

Sample Identity : 15744797-
Date Acquired : 28/12/17 10:30:35 PM
Units : mg/kg
Sample Multiplier : 0.000
Dilution :



CERTIFICATE OF ANALYSIS

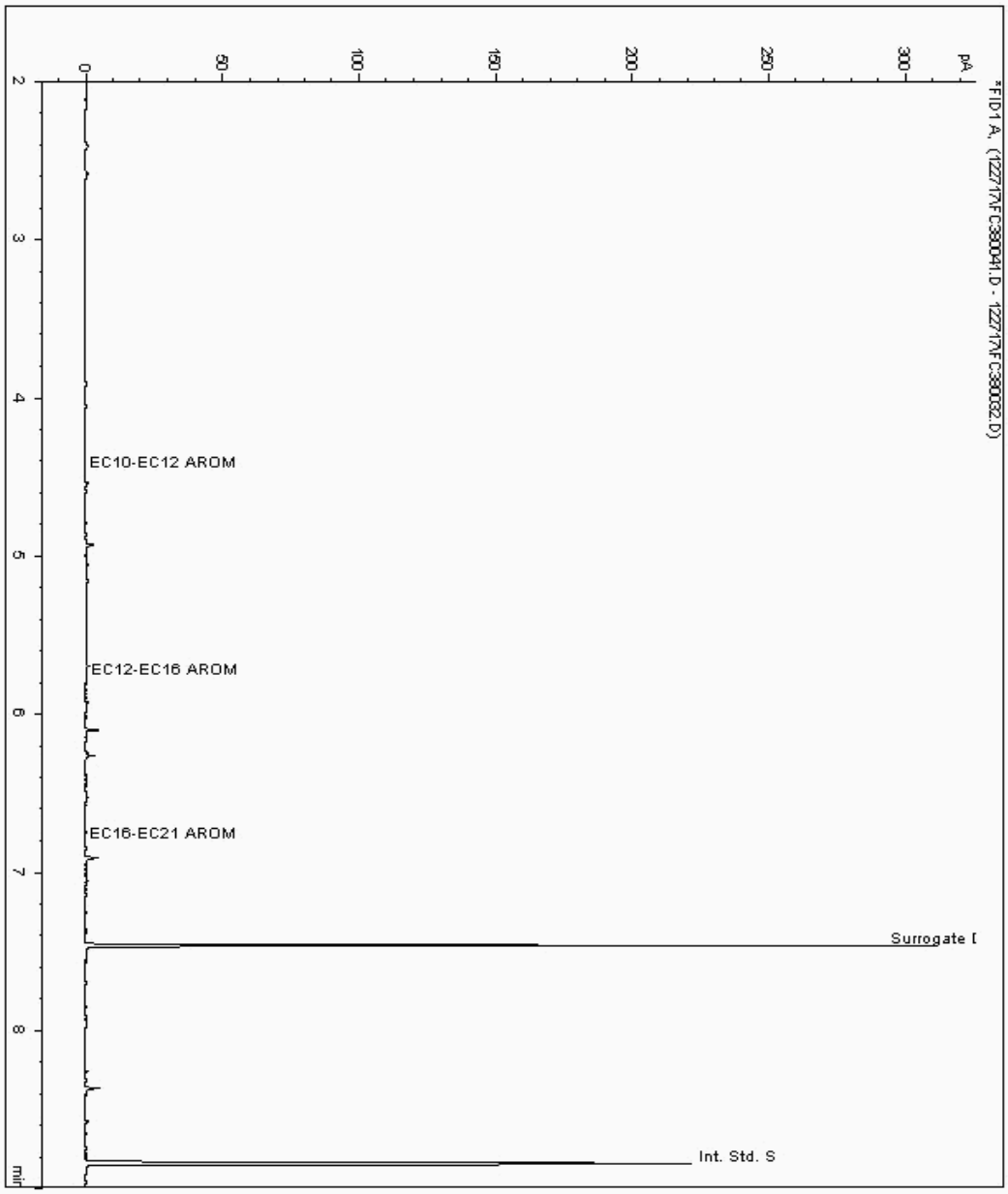
SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) Aqueous GC (W) **Sample No :** 16786812 **Depth :** 0.00 - 0.00
Sample ID : WS205

Alcontrol/Geochem Analytical Services
EPH Range Organics (C10 - C40)

Sample Identity : 15744785-
Date Acquired : 28/12/17 10:52:28 PM
Units : mg/kg
Sample Multiplier : 0.000
Dilution :



CERTIFICATE OF ANALYSIS

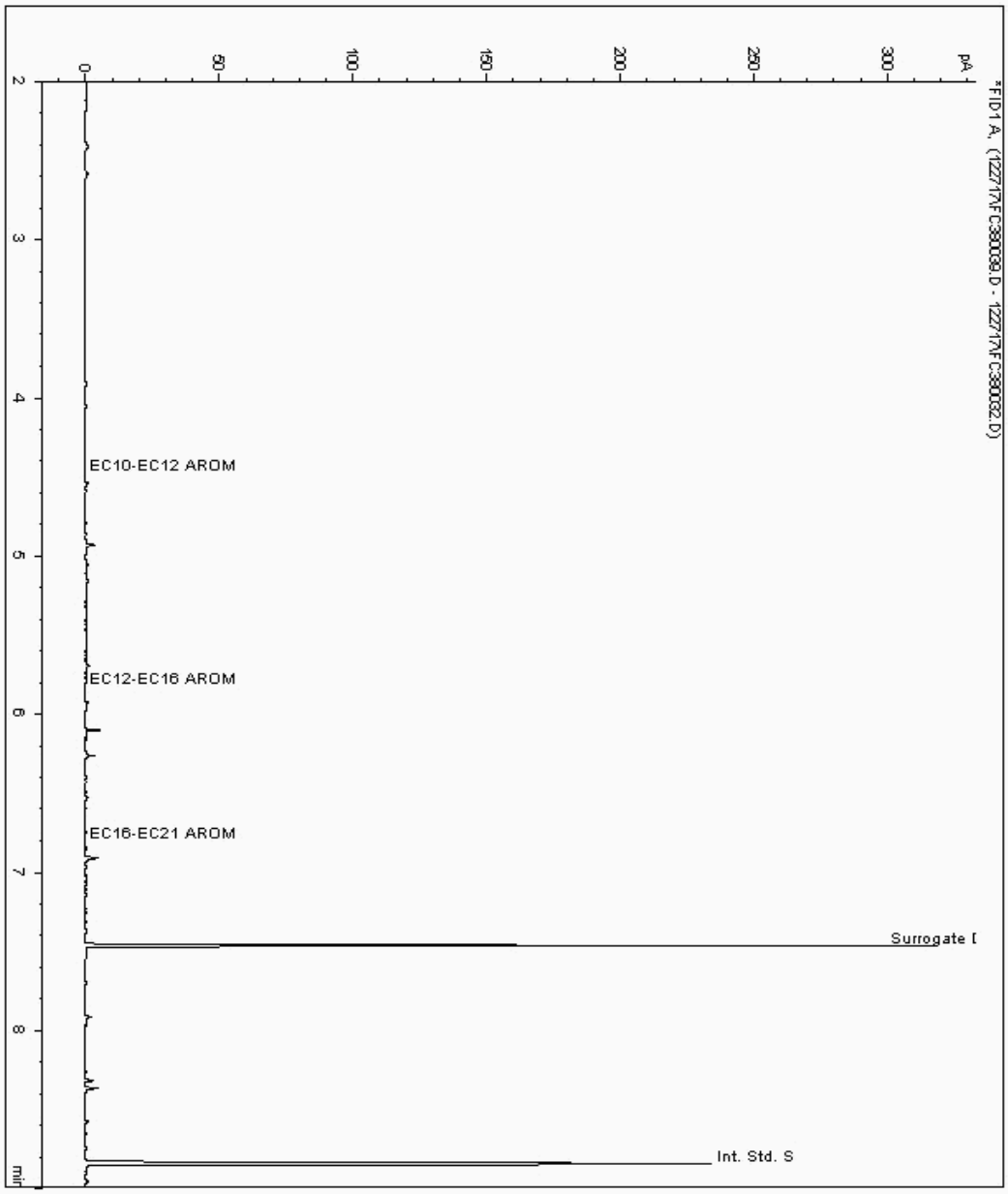
SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) Aqueous GC (W) **Sample No :** 16786828 **Depth :** 0.00 - 0.00
Sample ID : WS202

Alcontrol/Geochem Analytical Services
EPH Range Organics (C10 - C40)

Sample Identity : 15744772-
Date Acquired : 28/12/17 10:09:05 PM
Units : mg/kg
Sample Multiplier : 0.000
Dilution :



CERTIFICATE OF ANALYSIS

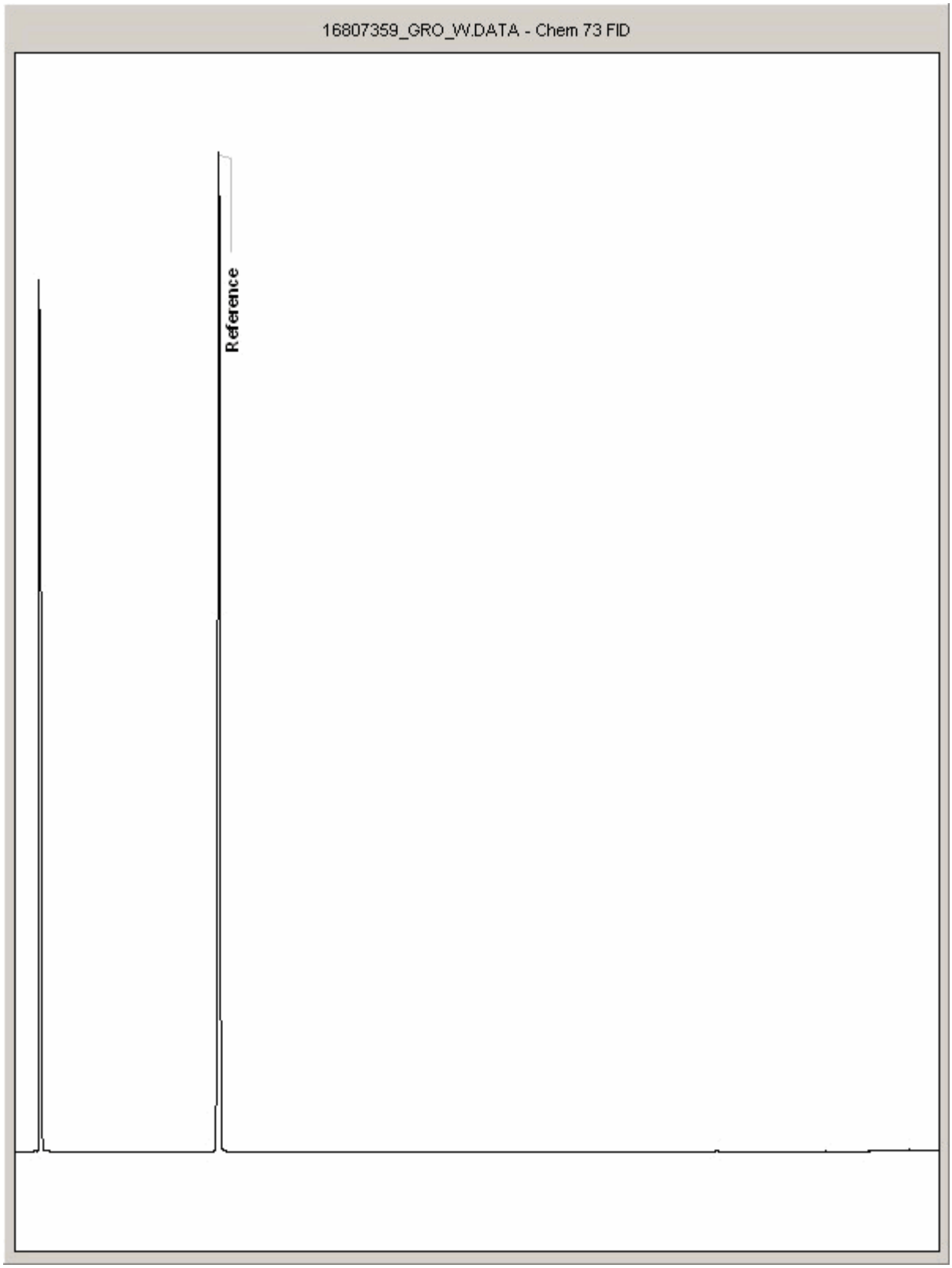
SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 16807359
Sample ID : WS202

Depth : 0.00 - 0.00



CERTIFICATE OF ANALYSIS

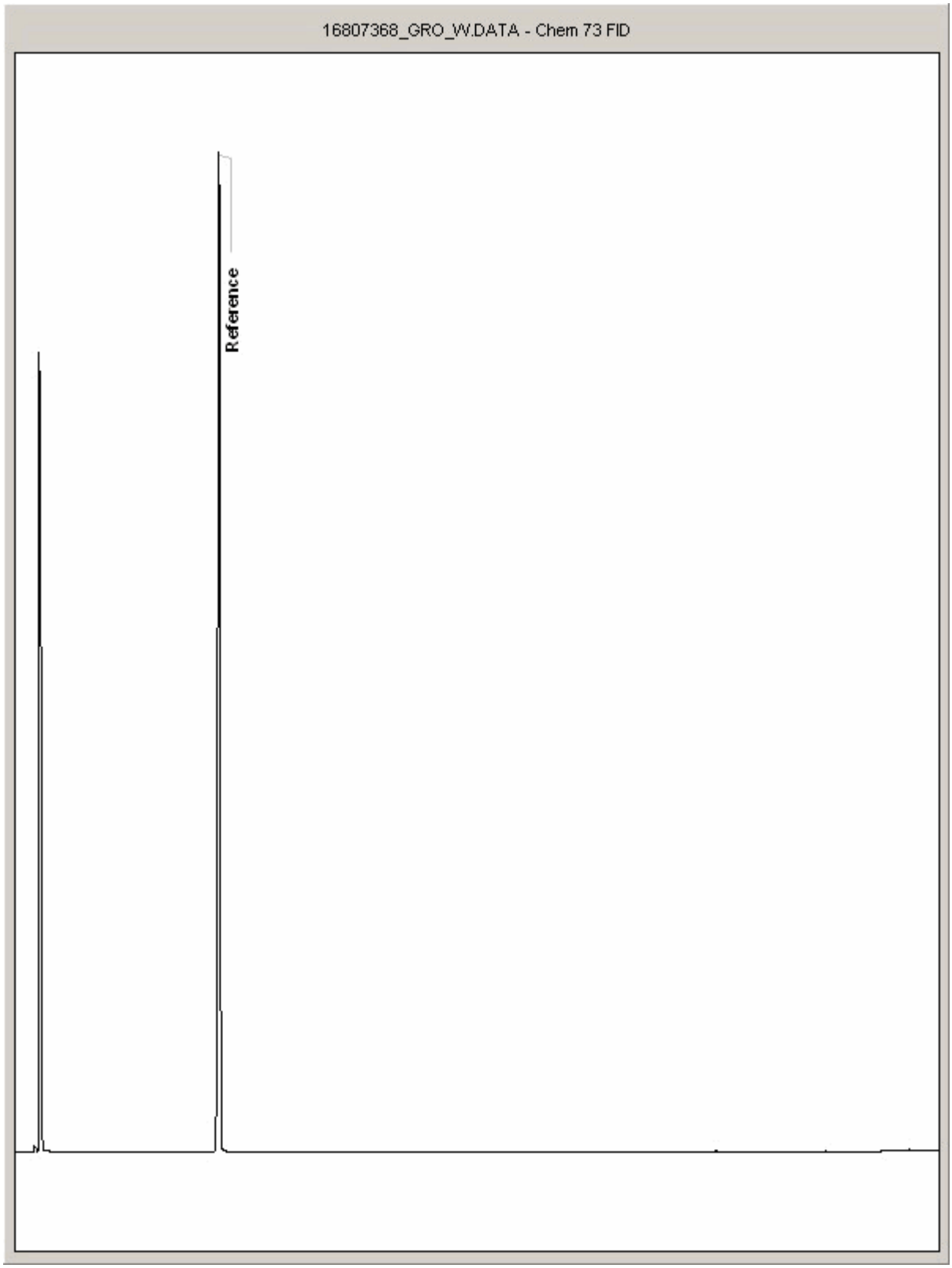
SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 16807368
Sample ID : WS207

Depth : 0.00 - 0.00



CERTIFICATE OF ANALYSIS

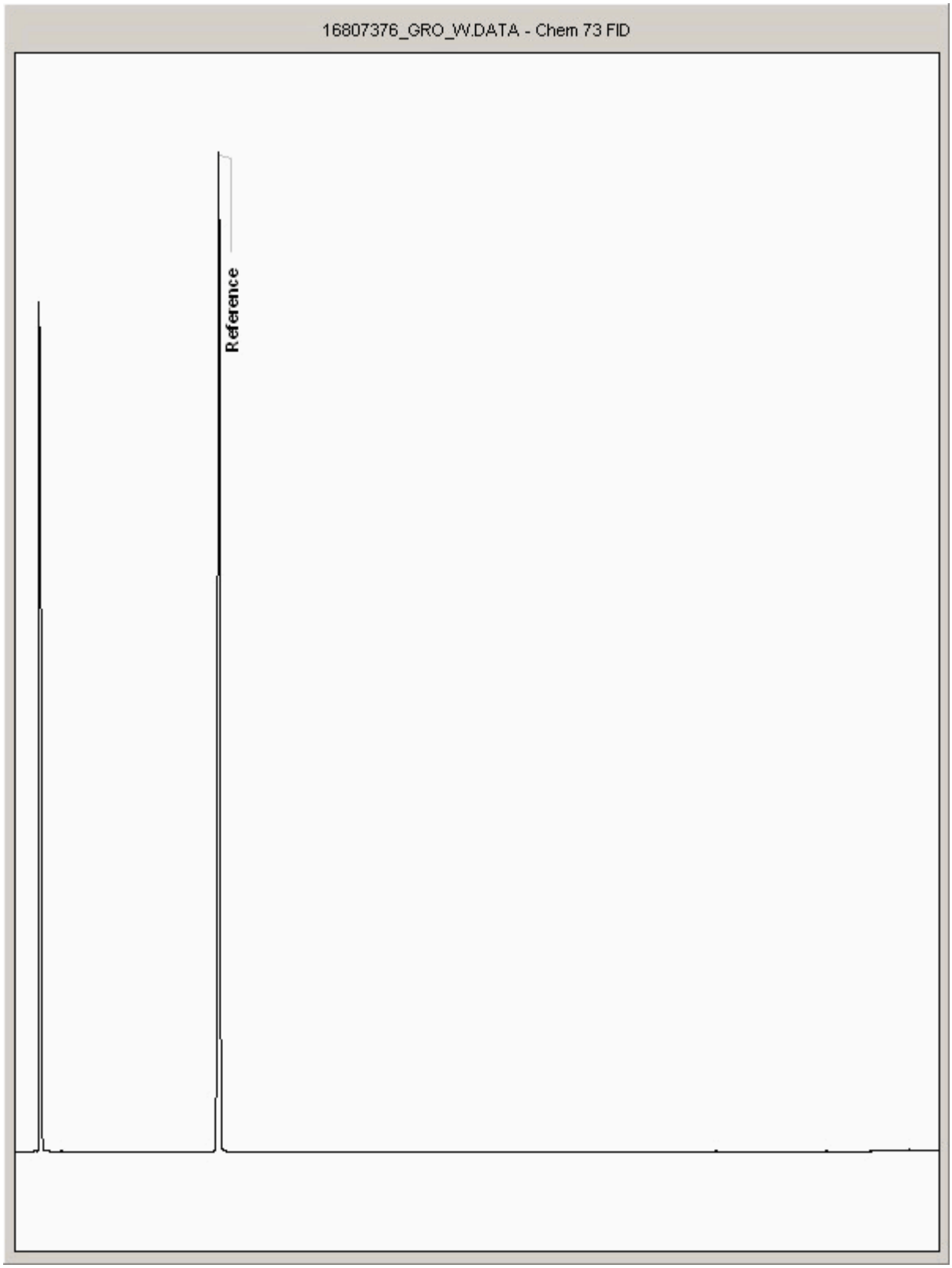
SDG:	171219-19	**Client Reference:**	70041591	**Report Number:**	438677
Location:	Kraft, Banbury	**Order Number:**	6316510	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 16807376
Sample ID : WS205

Depth : 0.00 - 0.00



Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Appendix D

HUMAN HEALTH GAC DERIVATION

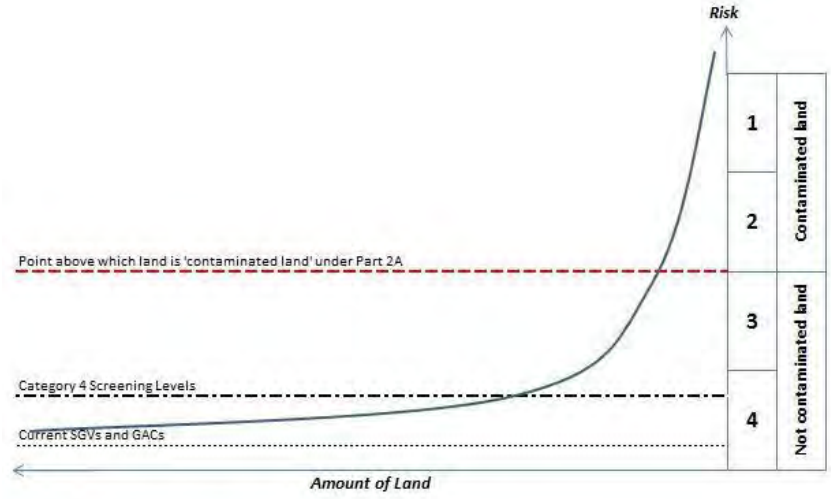
METHODOLOGY FOR THE DERIVATION OF GENERIC QUANTITATIVE ASSESSMENT CRITERIA TO EVALUATE RISKS TO HUMAN HEALTH FROM SOIL & GROUNDWATER CONTAMINATION

UK APPROACH

In the UK, the potential risks to human health from contamination in the ground are usually evaluated through a generic quantitative risk assessment (GQRA) approach. This allows generic and conservative exposure assumptions to be readily applied to risk assessments and can be a useful tool for rapidly screening data and to identify those contaminants or scenarios that could benefit from further investigation and/or site-specific detailed quantitative risk assessment (DQRA). Current industry good practice is to use the approach presented in the Environment Agency (EA) publications SR2[1] and SR3[2]. This approach allows the derivation of Generic Assessment Criteria (GACs), primarily for chronic exposure.

In April 2012, the Department of Environment, Food and Rural Affairs (Defra) published updated statutory guidance[3] which introduced a four category approach to determining whether land in England and Wales is contaminated or not on the grounds of significant possibility of significant harm (SPOSH). **Figure 1** presents a graphical representation of the categories.

Figure 1: Four Categories for Determining if Land Represent a SPOSH



Cases classified as Category 1 are considered to be SPOSH based on actual evidence or an unacceptably high probability of harm existing. Category 4 cases are those where there is no risk, or a low risk of SPOSH.

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[1] Environment Agency '*Human Health Toxicological Assessment of Contaminants in Soil',* Report SC050021/SR2. January 2009.
[2] Environment Agency '*Updated Technical Background to the CLEA Model*,' Report SC050021/SR3. January 2009.
[3] Defra '*Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance'.* April 2012.

GACs represent a minimal risk level, well within Category 4. A 2014 publication by Contaminated Land: Applicatons in Real Environments (CL:AIRE),SP1010[4] and endorsed by Defra[5] provided an approach to determine Category 4 Screening Levels (C4SLs) which are higher than the GACs whilst being "more pragmatic but still strongly precautionary". It also provided C4SLs for six contaminants of concern. Although the C4SLs were designed to support Part 2A assessments to determine 'contaminated land' they are specifically mentioned, along with reference to the Part 2A statutory guidance, by the Department for Communities and Local Government (DCLG) for use in a planning context[6].

An updated version the Contaminated Land Exposure Assessment (CLEA) Workbook (v1.071) was released by the EA in September 2015 to take into account the publication of SP1010. The updates comprised: additional toxicity data for the six chemicals for which C4SLs were derived; two new public open space land use scenarios; updated exposure parameters; options to run the model using C4SL exposure assumptions; and increased functionality. There were no changes to algorithms, so it is still possible to replicate the withdrawn SGVs using the input parameters held within v1.071.

It should be noted that the four category approach has not been adopted in Scotland under Part 2A or the planning regime. The Part 2A statutory guidance applicable in Scotland (Paper SE/2006/44 dated May 2006) does not reflect the changes introduced by Defra in April 2012 which allow for the use of C4SLs within Part 2A risk assessments. Additionally, it is considered that the principal of 'minimal risk' should still apply under planning in Scotland, based on current guidance.

WSP APPROACH

Following the withdrawal of the SGVs, and in the absence of an industry-wide, accepted set of GACs it is down to individual practitioners to derive their own soil assessment criteria. WSP has used the approach provided within SR2, SR3, SP1010, CLEA Workbook v1.071and SR4[7] to produce a set of minimal risk GACs. The chemical-specific data within two key publications were considered during their production: CL:AIRE 2010[8] and LQM 2015[9]. Both documents provide comprehensive sets of GACs for different contaminants of concern.

The LQM Suitable For Use Levels (S4ULs) have selected exposure parameters someway between those of the SR3 land uses and the C4SL exposure scenarios. This approach was rejected by WSP as not representing minimal risk, however, the LQM S4UL document was critically reviewed and the approach and chemical input parameters were utilised where considered to be appropriate.

An industry-led C4SL Working Group is in the process of deriving a larger set of C4SLs in the near future, for approximately 20 contaminants. This will include a critical review of the chemical input data for all selected substances, and may therefore lead to further amendments to the chemical input data used in the WSP in-house screening values. It is considered likely that the contaminant list will

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[4] CL:AIRE *'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination'* SP1010, Final Project Report (Revision 2). September 2014.
[5] Defra 'SP1010: *Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document'*. December 2014.
[6] DCLG Planning Practice Guidance '*Land Affected by Contamination'*, particularly Paragraphs 001 and 007. Ref IDs: 33-001-20140306 & 33-007-20140612.
[7] Environment Agency '*CLEA Software (Version 1.05) Handbook (and Software)',* Report SC050021/SR4. September 2009.
[8] CL:AIRE 'The EIC/AGS/CL:AIRE *Soil Generic Assessment Criteria for Human Health Risk Assessment'.* ISBN 978-1-05046-20-1. January 2010.
[9] Nathanail et al '*The LQM/CIEH S4ULs for Human Health Risk Assessment'*, Land Quality Press, ISBN 978-0-9931084-0-2. 2015.

crossover with the current CL:AIRE GACs. As such, this document was not critically reviewed by WSP.

WSP's current approach to the assessment of risks to human health is to continue to evaluate minimal risk through the use of in-house derived GACs, and to use the published C4SLs as a secondary tier of assessment until such time as additional C4SLs are published and/or in-house values are derived.

EXPOSURE MODELS

LAND USES

WSP has largely adopted the exposure assumptions of the generic land use scenarios included within SR3, with two additional public open space scenarios included from within SP1010:

- Residential with homegrown produce consumption;
- Residential without homegrown produce consumption;
- Allotments;
- Commercial;
- Public open space near residential housing (POS_{resi}); and
- Public park (POS_{park}).

Exceptions are described in the following Sections.

SOIL PROPERTIES

SR3 assumes a sandy loam soil with a pH of 7 and a Soil Organic Matter (SOM) content of 6% for its generic land uses, based on the geographical spread of topsoils in the UK. WSP has adopted these default values. In addition, GACs based on an SOM of 1% and 2.5% have been derived, based on common experience of the nature of Made Ground and lack of topsoil on many brownfield sites.

RECEPTOR CHARACTERISTICS AND BEHAVIOURS

SP1010 provides some updated exposure parameters for long-term inhalation rates[10] and the consumption rates for homegrown produce[11] compared to those provided in SR3. This data was used to derived WSP's GACs.

The changes in inhalation rates do not apply to the allotment generic land use scenario, as these are based on the breathing rates for short-term exposure of light to moderate intensity activity which were derived from a study that was not updated in USEPA 2011, so the SR3 rates were retained.

[10] USEPA, National Centre for Environmental Assessment '*Exposure Factors Handbook: 2011 Edition*' EPA/600/R-09/052F. September 2011.
[11] National Diet and Nutrition Survey 2008/2009 to 2010/2011.

CHEMICAL DATA

PHYSICO-CHEMICAL PARAMETERS

Physico-chemical properties for the contaminants for which GACs have been derived have been obtained following critical review of the following hierarchy of data sources:

1. Environment Agency/Defra SGV reports where available.
2. Environment Agency '*Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values*', Report SC050021/SR7, November 2008.
3. Published fate and transport reviews within Nathanail et. al 2015 and CL:AIRE 2010.

Where appropriate, and where sufficient data is available, values were adjusted to reflect a UK soil temperature of 10ºC (e.g. K_{aw}).

TOXICOLOGICAL DATA

Toxicological data for the derivation of minimal risk Health Criteria Values (HCV) for each contaminant was selected with due regard to the approach presented in SR2. Where appropriate, the following hierarchy of data sources was used:

1. UK toxicity reviews published by authoritative bodies including:
   - EA;
   - Public Health England (PHE);
   - Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT); and
   - Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment (COC).
2. Authoritative European sources such as European Food Standards Agency (EFSA)
3. International organisations including:
   - World Health Organisation (WHO); and
   - Joint FAO/WHO Expert Committee on Food Additives (JECFA).
4. Authoritative country-specific sources including:
   - United States Environmental Protection Agency (USEPA);
   - US Agency for Toxic Substances and Disease Registry (ATSDR);
   - US Integrated Risk Information System (IRIS); and
   - Netherlands National Institute for Public Health and the Environment (RIVM).

Factors such as the applicability of the data to human health (e.g. epidemiological vs. animal studies), the quality of the data, the level of uncertainty in the results and the age of the data were also taken into account in the final selection. Details for specific substances are available on request.

MEAN DAILY INTAKES

Estimations of background exposure for each threshold substance have been updated. In line with the SR2 approach, the exposure from non-threshold substances in the soil does not take into account exposure from other sources, and as such GACs were derived without consideration of the Mean Daily Intake (MDI) for those substances.

The data published by the EA in its series of TOX reports between 2002 and 2009 was evaluated to determine whether the values were considered to remain valid today. Values from these current UK published sources were not amended unless they were considered to be significantly different so that the GACs remained as comparable as possible with the revoked SGVs.

ORAL MEAN DAILY INTAKES

Oral MDI were generally estimated as the sum of exposure via the ingestion of food and drinking water using the default adult physiological parameters presented in Table 3.3 of SR2.

Data on the exposure of substances from food ingestion was generally obtained from UK Total Diet Studies (TDS) published by the Food Standards Agency (FSA) and its predecessor the Ministry of Agriculture, Fisheries and Food (MAFF) and from studies commissioned by COT. Where no UK-specific data was available, MDI were derived from the European Food Safety Authority (EFSA), Health Canada and US sources. This was a rare occurrence, and in these instances, the data was evaluated to determine its applicability to the UK.

Data on the concentrations of substances in tap water was obtained from a variety of sources. UK data was used where available, with preference given to Drinking Water Inspectorate (DWI) 2014 data from water company tap water testing (LOD, 1st and 99th percentile data is available). Where the substance was not included in tap water testing, other UK sources of information were considered including:

- à DWI data from water company tap water testing from previous years;
- à COT; and
- à FSA.

Where UK data was not available, a number of other data sources were considered, largely WHO International Programme on Chemical Safety (IPCS) Concise International Chemical Assessment Documents (CICADs) and background documents for the development of Guidelines for Drinking Water Quality, using professional judgement on the relevance of the data to the UK. The final decision on the MDI from drinking water was made using professional judgement on the balance of relevance and probability, taking into account the detection limit where not detected, Koc and solubility, reduction in use of the substance, banned substances, tight controls (e.g. on explosives) and with due consideration to the SR2 instruction that “if no data or information in background exposure are available, background exposure should be assumed to be negligible and the MDI set to zero….”.

Data from other countries was generally not used because it was considered that the hydrogeology of these countries along with industrial practices were unlikely to be reflective of the UK.

INHALATION MEAN DAILY INTAKES

Inhalation MDIs were based on estimates of average daily exposure by the inhalation pathway and calculated using the default adult physiological parameters presented in Table 3.3 of SR2.

The inhalation MDIs were generally estimated using background exposure data from the UK, derived from Defra's UK-AIR: Air Information Resource[12], which provides ambient air quality data from a number of sites forming a UK-wide monitoring network. The MDIs for heavy metals were based on rolling annual average metal mass concentration data from Defra's UK Heavy Metals Monitoring Network from the period October 2009 to September 2010[13].

Information for some substances was obtained from UK sources including Environment Agency TOX reports and data from the UK Expert Panel on Air Quality Standards (EPAQS). Where recent UK data was not available, data was sourced from the International Programme on Chemical Safety (IPCS), the World Health Organisation (WHO), the Agency for Toxic Substances and Diseases Registry (ATSDR), Health Canada, and various other peer-reviewed sources summarised by LQM/CIEH[14].

For other substances, where no data or information on background exposure was available, background exposure was assumed to be negligible and the MDI set at 0.5*TDI in accordance with guidance in SR2.

PLANT UPTAKE

Soil to plant concentration factors are available in CLEA v1.071 for arsenic, cadmium, hexavalent chromium, lead, mercury, nickel and selenium. For all remaining inorganic chemicals, concentration factors were obtained using the PRISM model. Substance-specific correction factors have been selected in accordance with the guidance established within SR3. This is consistent to the approach utilised in the derivation of the LQM S4UL values and the EIC/AGS/CL:AIRE GAC.

Where there is a lack of appropriate data to enable the derivation of specific soil to plant concentrations factors for organic chemicals, plant uptake was modelled within CLEA v1.071 using the generic equations recommended within SR3, as follows:

- Green Vegetables – Ryan et al. (1988);
- Root Vegetables – Trapp (2002);
- Tuber Vegetables – Trapp et al. (2007); and
- Tree Fruit – Trapp et al. (2003).

There are no suitable models available for modelling uptake for herbaceous fruit or shrub fruit. Exposure is considered negligible.

[12] Crown 2016 copyright Defra via uk-air.defra.gov.uk, licenced under the Open Government Licence (OGL).
[13] Defra, 2013 Spreadsheet of historic data for multiple years for the Metals network. Available online at: http://uk-air.defra.gov.uk/data/metals-data. [Accessed 13/03/2016].
[14] LQM/CIEH, 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment.

SOIL SATURATION LIMITS

GACs are not limited to their theoretical soil saturation within CLEA, although where either the aqueous or the vapour-based saturation is exceeded, this is highlighted within the Workbook (compared with the lower of the two values). This affects pathways which depend on partitioning calculations so in reality this only affects the vapour pathways and is relevant to organic substances and other substances, such as elemental mercury, that have a significant volatile component. However, the Workbook highlights saturation for direct contact pathways to indicate to the user where further qualitative consideration of free phase contamination at surface may be required.

Where the lower of the two saturation limits is exceeded and the vapour pathway is the only exposure route being considered, the chronic risks to human health are likely to be negligible. Further evaluation could be undertaken using an alternative model suitable for evaluating non-aqueous phase liquids (NAPLs), such as the Johnson & Ettinger (J&E) approach described in USEPA 2003. However, WSP considers that if NAPLs are suspected, given the known limitations and over-simplifications of J&E, soil vapour monitoring is a more accurate way of assessing potential risks.

Where the lower saturation limit is exceeded for the vapour pathway and a number of exposure routes are being considered, then the contribution from the NAPL via vapour inhalation to the overall exposure can be evaluated using the procedure provided in SR4. WSP would evaluate this as part of a DQRA process or through soil vapour monitoring on-site to determine site-specific soil vapour concentrations.

CHEMICAL SPECIFIC ASSUMPTIONS

CYANIDES

Cyanide has high acute toxicity, and short term exposure is an important consideration when assessing the risks from soils contaminated with cyanide. The primary risk to human receptors from free cyanide in soils is an acute risk.

There is no current UK guidance available for calculating acute risks from free cyanide. Consequently, GAC for acute exposure were derived using the algorithms presented in MADEP 1992[15] and assuming a one-off ingestion of 10g of soil (this conservative value has been taken as an upper bound estimate for a one-off soil ingestion rate amongst children). Receptor body weights have been selected according to the critical receptor for each exposure scenario. The lowest of the chronic and acute GAC for each land use scenario were adopted by WSP. Brinckerhoff.

LEAD

The SGV for lead was withdrawn by the EA in 2009, and in 2011 the EA withdrew their published TOX report in light of new scientific evidence. The C4SL for lead was derived using the latest scientific evidence from a large human dataset. As such, no chemical-specific margin was applied in the derivation of the C4SL for lead. It may be possible for WSP to derive a GAC for lead using the same dataset and applying a chemical-specific margin, but the value is likely to be lower than UK natural background concentrations. Therefore, WSP has adopted the toxicological data used to derive the C4SLs in deriving the GAC for lead until such time as alternative GACs are published by an authoritative body. The relative bioavailability was set at 100% in line with the approach taken for other GACs, whereas the C4SL assumes 60% for soil and 64% for airborne dust. Thus, the WSP GAC are lower than the C4SLs.

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[15] MADEP '*Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration*' 1992. http://www.mass.gov/dep/toxics/cn_soil.htm

POLYCYCLIC AROMATIC HYDROCARBONS

WSP's approach to the assessment of polycyclic aromatic hydrocarbons (PAHs) uses the surrogate marker approach. BaP was used as a surrogate marker for all genotoxic PAHs in line with the Health Protection Agency 2010[16] recommendations and SP1010. This assumes that the PAH profile of the data is similar to that of the coal tars used in the Culp *et al* oral carcinogenicity study from which the toxicity data for BaP was produced. In reality, this profile has been shown by HPA to be applicable on the majority of contaminated sites based on assessment of sites across the country.

The alternative is the Toxic Equivalency Factor (TEF) approach which uses a reference compound and assigns TEFs for other compounds based on estimates of potency. Key uncertainties with this approach include the assumption that all compounds have the same toxic mechanism of action within the body and that no compounds with a greater potency than the reference compound are present. It is considered by the HPA that the TEF approach is likely to under predict the true carcinogenicity of PAHs and therefore favours the surrogate marker approach.

For these reasons, WSP considers that the adoption of BaP as a surrogate marker for genotoxic PAHs as opposed to the TEF approach is reasonable, even in cases where the PAH profile may differ from that of the Culp *et al* study. In addition, WSP has derived a GAC for naphthalene, which is commonly a risk driver due to its high volatility, relative to other PAH compounds, as an indicator compound for threshold PAHs.

CHEMICAL GROUPS

For a number of chemical groups, the available toxicity data is for combinations of chemicals. Given that the physico-chemical parameters may differ between the chemicals, the GACs for the chemicals within the groups have been calculated and then the lowest GAC selected to represent the entire group. This was the approach taken by the EA for m-, o- and p-xylenes, and has also been adopted by WSP for:

- 2-chlorophenol, 2,4-dichlorophenol, 2,4,6-trichlorophenol and 2,3,4,6-tetrachlorophenol;
- 2-, 3- and 4-methylphenol (total cresols);
- aldrin and dieldrin;
- α- and β-endosulphan; and
- trimethylbenzenes.

EXPOSURE TO VAPOURS

INHALATION OF MEASURED VAPOURS

WSP has derived a set of soil vapour GACs (GAC_{sv}) that allow for the assessment of measured site soil vapour concentrations, using J&E, in order to establish potential risks via indoor inhalation of vapours. This methodology enables a more robust assessment of exposure via the inhalation of soil vapours indoors than using CLEA-derived soil GAC, as it is based upon measured soil vapour concentrations beneath the site. It also allows for the assessment of vapours from all source terms (i.e. groundwater, soil or NAPL). Outdoor inhalation was not included. WSP considers that the indoor inhalation pathway is the significantly dominant risk-driver.

[16] HPA Contaminated Land Information Sheet '*Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs)* 2010

The generic land use scenarios within CLEA (residential and commercial) that were used to derive the soil GAC were used to define the receptor and building characteristics for the soil vapour GAC. Only residential and commercial generic land use scenarios include the indoor inhalation of vapours pathway.

The GAC_{sv} were derived for three different soil types; sand, sandy loam and clay, reflecting the importance of this parameter within the J&E model. A depth to contamination of 0.85 m below the base of the building foundation was assumed (i.e. 1 m below ground level). This differs from the depth assumed for the soil GAC (0.5 m bgl), but was selected by WSP as a reasonable worst case scenario.

It is acknowledged that the J&E commonly over-predicts indoor vapour concentrations. In particular, it will significantly over-predict vapour concentrations for suspended floor slabs, which many new builds are constructed with, it does not take into account lateral migration and assumes an infinite source of contamination at steady state conditions. In addition, it is common for soil gas/vapour wells to be installed with at least 1 m of plain riser at the surface and this equates to a total depth of 0.85 m below the building foundation plus a 0.15 m thick foundation, and so is more representative of the depth that samples will be taken from.

The TDSIs and IDs for each substance were converted from $\mu gkg^{-1}{}_{bw}day^{-1}$ to μgm^{-3} using the standard conversions quoted in Table 3.3 of SR2, thereby replacing the need to model C_{air} in the equation:

$$C_{air} = \alpha . C_{vap} . 1{,}000{,}000 cm^3 m^{-3}$$

Where:

C_{air} is the concentration of vapours within the building, mg^{-3}

α is the steady state attenuation coefficient between soil and indoor air, dimensionless

C_{vap} is the soil vapour concentration, $mgcm^{-3}$

The target concentrations within indoor air for each substance (C_{air}) are a function of receptor inhalation rates and occupancy periods, as defined by the site conceptual exposure model (assuming standard CLEA occupancy periods and receptors).

The attenuation factor was calculated using J&E (Equation 10.4 in SR3) and the resulting C_{vap} is equivalent to the GAC_{sv} for the modelled exposure scenario.

Where the calculated GAC_{sv} for a substance exceeds the vapour saturation limit, no GAC_{sv} has been proposed.

INHALATION OF GROUNDWATER-DERIVED VAPOURS

The CLEA model does not have the capacity to derive GACs to assess vapours derived from dissolved phase contamination. WSP has derived a set of groundwater GACs (GAC_{gw}) to evaluate the potential risks through the indoor inhalation of groundwater-derived vapours by first applying the approach described above for the derivation of the WSP GAC_{sv} to determine the acceptable concentration in soil vapour directly above the water table.

The depth to groundwater was assumed to be 1 m bgl (i.e. 0.85 m below the base of the building foundation). This depth was considered to be more representative of commonly encountered groundwater conditions than the 0.5 m below the base of the building foundation (i.e. 0.65 m bgl) that is used by CLEA for an unsaturated source present in the overlying soil.

The GAC_{gw} was then back-calculated from the GAC_{sv} using the air-water partition coefficient (K_{aw}) for each substance.

Where the calculated GAC_{gw} for a substance exceeds the solubility limit, no GAC_{gw} has been proposed.

Appendix E

SCREENING TABLES

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Aliphatics and Aromatics

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS202	WS203		WS205			WS207	
					0.7 - 1	1 - 1.3	2.1 - 2.3	0.7 - 1	2.1 - 2.3	3.5 - 3.7	0.4 - 0.6	1.1 - 1.3
				Depth (m bgl)	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17
				Sample Date								
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive	River Terrace Deposits	Made Ground Cohesive	Made Ground Cohesive	River Terrace Deposits	Made Ground Granular	Made Ground Cohesive
Aliphatic C05-C06	mg/kg	0.010	3,190		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C06-C08	mg/kg	0.010	7,780		<0.01	0.0394	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C08-C10	mg/kg	0.010	2,000		<0.01	0.82	0.0146	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C10-C12	mg/kg	0.010	9,690		<0.01	3.02	0.0159	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic C12-C16	mg/kg	0.10	58,800		<0.1	35.9	<0.1	<0.1	2.71	<0.1	1.05	<0.1
Aliphatic C35-C44	mg/kg	0.10	1,910,000		<0.1	0.925	2.61	1.99	<0.1	<0.1	0.712	<0.1
Aromatic C07-C08	mg/kg	0.010	56,100		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C08-C10	mg/kg	0.010	3,460		<0.01	0.569	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C10-C12	mg/kg	0.010	16,200		<0.01	2.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic C12-C16	mg/kg	0.10	36,200		<0.1	10.9	<0.1	<0.1	1.34	<0.1	<0.1	0.728
Aromatic C16-C21	mg/kg	0.10	28,600		<0.1	18.2	<0.1	<0.1	1.97	<0.1	<0.1	0.798
Aromatic C21-C35	mg/kg	0.10	28,600		<0.1	8.24	<0.1	8.3	2.7	0.923	17.9	1.86
Aromatic C35-C44	mg/kg	0.10	28,600		<0.1	<0.1	4.97	5.04	<0.1	<0.1	69.1	<0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Alkali and Alkaline Earth Metals

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS202	WS202	WS203	WS205	WS205	WS207	WS207	WS207
					0 - 0.1	0.7 - 1	1 - 1.3	0.7 - 1	2.1 - 2.3	0 - 0.1	0.4 - 0.6	1.1 - 1.3
				Depth (m bgl)	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17
				Sample Date								
				Geology (at top depth of sample)	Topsoil	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Granular	Made Ground Granular	Made Ground Cohesive
Barium	mg/kg	0.60	22,100		41.8	83.8	76.8	48.3	54.1	38.5	38	69.1
Beryllium	mg/kg	0.010	12.0		0.533	2.5	1.88	1.63	1.45	0.783	1.39	1.31

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

BTEX and Fuel Additives

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	WS202	WS203		WS205			WS207	
PointID											
				0.7 - 1	1 - 1.3	2.1 - 2.3	0.7 - 1	2.1 - 2.3	3.5 - 3.7	0.4 - 0.6	1.1 - 1.3
Depth (m bgl)				05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17
Sample Date											
Geology (at top depth of sample)				Made Ground Cohesive	Made Ground Cohesive	River Terrace Deposits	Made Ground Cohesive	Made Ground Cohesive	River Terrace Deposits	Made Ground Granular	Made Ground Cohesive
1,2,4-Trimethylbenzene	mg/kg	0.009	611		<0.09			<0.09			
Benzene	mg/kg	0.009	27.0	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
Ethylbenzene	mg/kg	0.004	5,710	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Methyl t-butylether (MTBE)	mg/kg	0.010	7,480	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.007	56,300	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Xylene - Total (Summed)	mg/kg	-999	5,920	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Xylene-m & p	mg/kg	0.010	5,920	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene-o	mg/kg	0.010	5,920	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Chlorinated Aliphatics

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
1,1,1,2-Tetrachloroethane	mg/kg	0.010	108		<0.1	<0.1
1,1,1-Trichloroethane	mg/kg	0.007	1,580		<0.07	<0.07
1,1,2,2-Tetrachloroethane	mg/kg	0.010	274		<0.1	<0.1
1,1,2-Trichloroethane	mg/kg	0.010	89.0		<0.1	<0.1
1,1-Dichloroethane	mg/kg	0.008	263		<0.08	<0.08
1,1-Dichloroethene	mg/kg	0.010	24.0		<0.1	<0.1
1,2-Dichloroethane	mg/kg	0.005	0.67		<0.05	<0.05
1,2-Dichloropropane	mg/kg	0.010	3.10		<0.1	<0.1
Carbon tetrachloride	mg/kg	0.010	31.0		<0.1	<0.1
Chloroethane	mg/kg	0.010	904		<0.1	<0.1
Chloroform	mg/kg	0.008	99.0		<0.08	<0.08
Chloromethane	mg/kg	0.007	0.96		<0.07	<0.07
Cis 1,2-Dichloroethene	mg/kg	0.006	14.0		<0.06	<0.06
Dichloromethane	mg/kg	0.010	257		<0.1	<0.1
Hexachlorobutadiene	mg/kg	0.10	31.0		<0.1	<0.1
Hexachloroethane	mg/kg	0.10	21.0		<0.1	<0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Chlorinated Aliphatics

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
Tetrachloroethene (PCE)	mg/kg	0.005	19.0		<0.05	<0.05
Trans-1,2-Dichloroethene	mg/kg	0.010	21.0		<0.1	<0.1
Trichloroethene (TCE)	mg/kg	0.009	1.20		<0.09	<0.09
Vinyl chloride	mg/kg	0.006	0.059		<0.06	<0.06

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Chlorinated Aromatics

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
1,2,3-Trichlorobenzene	mg/kg	0.020	102		<0.2	<0.2
1,2,4-Trichlorobenzene	mg/kg	0.10	265		<0.1	<0.1
1,2-Dichlorobenzene	mg/kg	0.10	2,020		<0.1	<0.1
1,3-Dichlorobenzene	mg/kg	0.008	30.0		<0.08	<0.08
1,4-Dichlorobenzene	mg/kg	0.005	584		<0.05	<0.05
Chlorobenzene	mg/kg	0.005	58.0		<0.05	<0.05
Hexachlorobenzene	mg/kg	0.10	105		<0.1	<0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Chlorinated Phenols

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
2,4,6-Trichlorophenol	mg/kg	0.10	2,700		<0.1	<0.1
2,4-Dichlorophenol	mg/kg	0.10	2,700		<0.1	<0.1
2-Chlorophenol	mg/kg	0.10	2,700		<0.1	<0.1
Chlorophenols - Total (Summed Isomers)	mg/kg	-999	2,700		0.1	0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Explosives

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
2,4-Dinitrotoluene	mg/kg	0.10	3,720		<0.1	<0.1
2,6-Dinitrotoluene	mg/kg	0.10	1,850		<0.1	<0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Halogonated Hydrocarbons

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
Bromobenzene	mg/kg	0.010	91.0		<0.1	<0.1
Bromodichloromethane	mg/kg	0.007	2.00		<0.07	<0.07
Bromoform	mg/kg	0.010	714		<0.1	<0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Metals

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS202		WS203	WS205		WS207		
					0 - 0.1	0.7 - 1	1 - 1.3	0.7 - 1	2.1 - 2.3	0 - 0.1	0.4 - 0.6	1.1 - 1.3
				Depth (m bgl)	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17
				Sample Date								
				Geology (at top depth of sample)	Topsoil	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Cohesive	Made Ground Granular	Made Ground Granular	Made Ground Cohesive
Arsenic	mg/kg	0.60	635		16.5	52.6	81.3	24.6	18.7	9.84	21.9	14.5
Boron	mg/kg	1.00	207,000		<1	<1	<1	<1	<1	<1	<1	<1
Cadmium	mg/kg	0.020	223		0.0373	0.64	0.347	0.452	<0.02	0.0389	0.538	<0.02
Copper	mg/kg	1.40	69,800		12.1	23.5	15.7	22.5	16.5	21.6	<14	15.8
Hexavalent Chromium	mg/kg	0.60	24.0		<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Lead	mg/kg	0.70	1,390		16.6	29.4	22.7	37.3	16.2	12.7	13.6	14.1
Mercury	mg/kg	0.14	1,110		<0.14	<1.4	<0.14	<1.4	0.922	0.623	<1.4	0.746
Nickel	mg/kg	0.20	1,710		15.7	56.2	64.3	39.4	30	9.48	28	35.5
Selenium	mg/kg	1.00	12,300		<1	<10	<10	<10	<1	<1	<10	<1
Vanadium	mg/kg	0.20	9,220		32.1	113	135	76.2	67.7	45.7	54	62.7
Zinc	mg/kg	1.90	1,050,000		143	121	117	99	84.6	84.4	66.4	81.3

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Other

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
2-Chloronaphthalene	mg/kg	0.10	370		<0.1	<0.1
Carbon Disulphide	mg/kg	0.007	11.0		<0.07	<0.07
Styrene	mg/kg	0.010	3,170		<0.1	<0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

PAHs

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS202	WS203		WS205			WS207	
					0.7 - 1	1 - 1.3	2.1 - 2.3	0.7 - 1	2.1 - 2.3	3.5 - 3.7	0.4 - 0.6	1.1 - 1.3
				Depth (m bgl)	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17	05/12/17
				Sample Date								
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive	River Terrace Deposits	Made Ground Cohesive	Made Ground Cohesive	River Terrace Deposits	Made Ground Granular	Made Ground Cohesive
Benzo (a) pyrene	mg/kg	0.015	38.0		<0.015	<0.015	<0.015	0.057	<0.015	<0.015	<0.015	<0.015
Naphthalene	mg/kg	0.009	193		<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Pesticides, Herbicides and Insecticides

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
Pentachlorophenol	mg/kg	0.10	406		<0.1	<0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Phenols

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
2,4-Dimethylphenol	mg/kg	0.10	15,700		<0.1	<0.1
2-Methylphenol (o-Cresol)	mg/kg	0.10	160,000		<0.1	<0.1
4-Methylphenol	mg/kg	0.10	160,000		<0.1	<0.1
Methylphenols Total (Summed)	mg/kg	-999	160,000		0.1	0.1
Phenol	mg/kg	0.10	760		<0.1	<0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

Phthalates

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
Bis (2-ethylhexyl) phthalate	mg/kg	0.10	85,200		<0.1	<0.1
Butyl benzyl phthalate	mg/kg	0.10	940,000		<0.1	<0.1
Diethyl phthalate	mg/kg	0.10	144,000		<0.1	<0.1
Di-n-butyl phthalate	mg/kg	0.10	15,400		<0.1	<0.1
Di-n-octyl phthalate	mg/kg	0.10	89,100		<0.1	<0.1

Commercial, SOM=1%

Site Area(s): Whole site
Phase(s): All phases

VOCs

Result > Assessment Criteria

Limit of detection > Assessment Criteria

Analyte	Units	LOD	GAC	PointID	WS203	WS205
					1 - 1.3	2.1 - 2.3
				Depth (m bgl)	05/12/17	05/12/17
				Sample Date		
				Geology (at top depth of sample)	Made Ground Cohesive	Made Ground Cohesive
iso-Propylbenzene	mg/kg	0.005	1,300		<0.05	<0.05
n-Propylbenzene	mg/kg	0.010	3,860		<0.1	<0.1

Appendix F

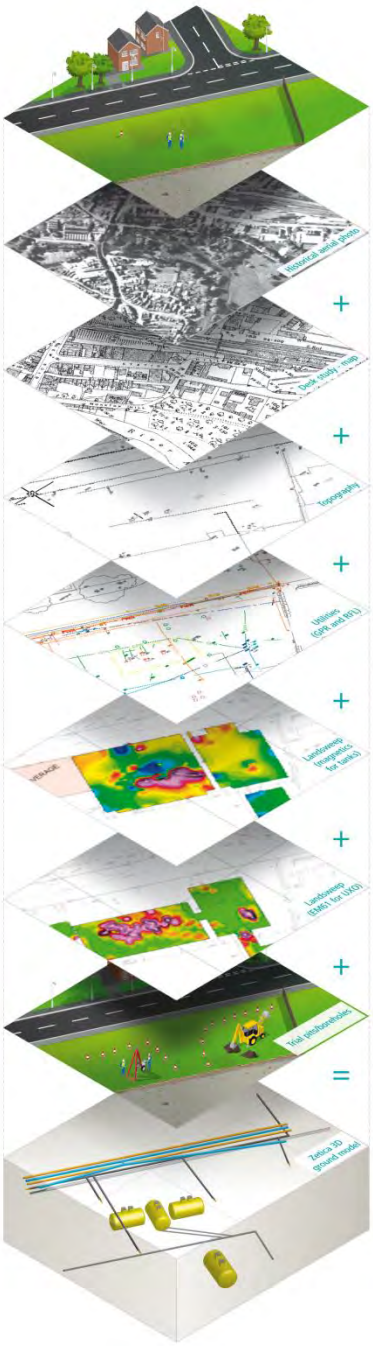
ZETICA REPORTS

Pre-Desk Study Assessment

Site:	Ruscote Avenue, Banbury, Oxfordshire
Client:	WSP
Contact:	Martin Lucass
Date:	24th November 2017
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ¢ Banbury National Filling Factory (NFF). ¢ Industries important to the war effort, including iron foundries and engineering works. ¢ Military barracks. ¢ Transport infrastructure and public utilities. ¢ Anti-Aircraft (AA) guns.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified.
WWII Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ¢ Industries important to the war effort, including aluminium works. ¢ Military barracks. ¢ Transport infrastructure and public utilities. ¢ AA and anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	1No. located approximately 4.7km north of the Site.
WWII Bombing	During WWII the Site was located in the Municipal Borough (MB) of Banbury, which officially recorded 21No. High Explosive (HE) bombs with a very low bombing density of 4.1 bombs per 405 hectares (ha). No readily available records have been found indicating that the Site was bombed.
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	No readily available records of bombing or other significant military activity on the Site have been found. It is considered that the Site is likely to have a low Unexploded Ordnance (UXO) hazard level. A detailed desk study, whilst always prudent, is likely to do no more than confirm a low UXO hazard level for the Site.

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary. It is possible that further research may change the level of identified hazard.

It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.



groundcheck

Location: KRAFT Site, Ruscote Avenue, Banbury

Client: WSP

Ref: P7380-17-R1-A

Date: 12th January 2018

Zetica Limited
Units 15 / 16 Hanborough Business Park
Long Hanborough, OX29 8LH
United Kingdom
Tel: 01993-886682 Fax: 01993-886683
Email: GroundCheck@zetica.com
WebSite: www.zetica.com

SUMMARY REPORT

Location: Kraft Factory, Ruscote Avenue, Banbury
Client: WSP
Reference: P7380-17-R1-A

1. INTRODUCTION

Scope

WSP (the Client) commissioned Zetica Ltd to undertake a GroundCheck® geophysical survey across an area of the KRAFT factory site on Ruscote Avenue, Banbury (the Site).

The survey was undertaken to verify the existence of an underground storage tank (UST). The results are intended to assist the Client in determining whether the Site is suitable for development.

The survey was undertaken on 8th January 2018.

The Site

The Site is a ~0.1ha area within the grounds of the Kraft factory in Banbury as shown in Figure1 below.

Information provided by the Client indicated that a UST could be located within the highlighted in orange in Figure 1.

Source: Google Maps

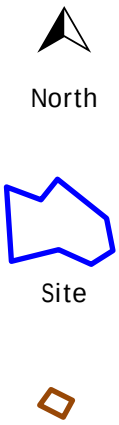


Figure 1: Site Location.

2. METHODOLOGY

Summary of techniques

The GroundCheck® survey utilised a combination of techniques comprising:

- Magnetometer profiling (magnetics): to map ferrous metallic targets such as USTs, reinforced structures, and utility services to 4-5m.bgl depending on size of targets and burial setting.
- Time-domain electromagnetic (TDEM) profiling: to map metallic targets such as USTs, reinforced structures, pipes and other scrap metal materials.
- Ground penetrating radar (GPR) survey: to characterise the depth of structures and utility services to a typical depth of 1-2m depending on ground conditions.
- Tracing utility services using radio frequency location (RFL) system.

Useful Link

http://www.zetica.com/methods/index.htm

Summary of survey design

Technique	Configuration	Line Spacing	Station interval
Magnetics	Dual sensor, vertical gradient mode.	1m	10Hz sampling rate, nominal 0.25m sampling interval
TDEM	Differential mode.	1m	10Hz sampling rate, nominal 0.25m sampling interval
GPR	250 MHz and 700MHz antennas	1m	2.5cm 1m x 1m orthogonal grid
RFL	Active and passive	N/A	N/A

Limitations

The following clarifies some of the limitations relevant to the survey:-

- Surface metal objects such as vehicles, fences, reinforced concrete, walls and above ground pipework can mask the subsurface response using magnetics and TDEM profiling methods.
- Factors such as multiple utility services or conductive sub-surface conditions (such as water retentive soils) can reduce the detectability of utility services or structures.
- GPR depth of detection is strongly dependent on the material properties of the ground. GPR signal can be attenuated by conductive soils and scattered by in ground targets (clutter) resulting in reduced detection depths.
- Depths of interpreted features were indicated where possible and were measured relative to the ground surface. These are based on data modelling and may not necessarily indicate the exact depth.
- The detectability depth for potential features depends on target size and Site-specific signal to noise ratios. Large diameter features will be detectable at greater burial depth than small diameter features in the same environment.
- RFL depths are derived from an induced signal that is centred on the utility service. The diameter of the utility service has not been considered.

3. DATA

Data Presentation

The GroundCheck® survey results are presented as an interpretative CAD drawing and figures providing plots of the geophysical data. These are referenced below.

Zetica drawings P7380-17-DWG02-A (Map of Residual Magnetic Field Strength - Bottom Sensor (magnetics)), P7380-17-DWG03-A (Map of 3D Analytic Signal Amplitude - Bottom Sensor (magnetics)) and P7380-17-DWG04-A (Map of Secondary Decay Voltage (TDEM)) comprise colour-coded grids of the geophysical data with the colours representing the amplitude of the measured property. Cool colours (blue and cyan) represent relatively low values whilst warm colours (red and magenta) correspond to relatively high values.

Figure Reference	Title
Figure 1	Site Location
Figure 2	Data repeatability (magnetics - Total Magnetic Field Strength)
Figure 3	Data repeatability (TDEM - Secondary Decay Voltage)
Figure 4	Example radargram (utility service)
Drawing Reference	**Title**
P7380-17-DWG01-A	Summary Interpretation Plan
P7380-17-DWG02-A	Map of Residual Magnetic Field Strength - Bottom Sensor (magnetics)
P7380-17-DWG03-A	Map of 3D Analytic Signal Amplitude - Bottom Sensor (magnetics)
P7380-17-DWG04-A	Map of Secondary Decay Voltage (TDEM)

Data Quality

The quality of the magnetics and TDEM data across the Site was good. Figures 2 and 3 show an example of a repeat profile line for the magnetics and TDEM datasets respectively. Both figures show good repeatability and relatively low levels of background noise. Above ground fencing and reinforced concrete in some areas of the Site has resulted in elevated levels of background noise.

Repeatability is shown between a profile (red) and its repeat (blue).

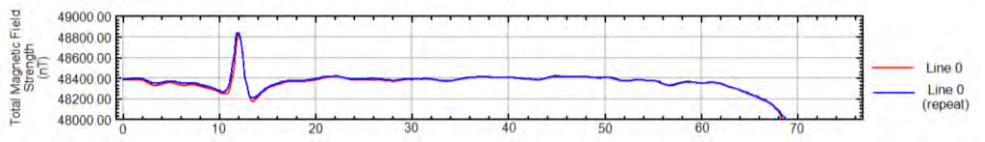


Figure 2: Data repeatability (magnetics - Total Magnetic Field Strength)

Repeatability is shown between a profile (red) and its repeat (blue).

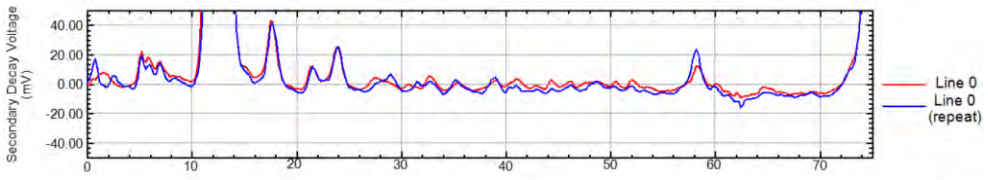


Figure 3: Data repeatability (TDEM - Secondary Decay Voltage)

The quality of the GPR data across the Site was typically good. The GPR survey achieved an estimated maximum detection depth of ~1.2m across the Site. This is derived from the average two-way travel time (TWTT) to the 'noise floor' (the time-depth at which the amplitude of noise exceeds that of the signal) of approximately 24ns, and a modelled signal velocity through the near-surface materials of ~100mm/ns. The signal velocity was determined using the hyperbolic curve-fitting method applied to selected anomalies observed within the datasets. The maximum detection depth is based on a utility service. Smaller features would have a lower maximum depth of detection.

Figure 4 comprises a grey-scale plot (termed a 'radargram') of the GPR. The colours of the radargram represent the measured GPR signal amplitude within the slice. Mid-tones (grey) represents low amplitude, white represents high positive amplitudes and black represents high negative amplitudes.

Where linear features have been detected by GPR it is not always possible to determine whether they are related to utility services or to establish the type of utility service. Detected linear features are presented with an appropriate line type in Zetica drawing P7380-17-DWG01-A (Summary Interpretation Plan).

Sample radargram showing the GPR response to an interpreted utility service (blue circle indicates hyperbola produced by reflection of radar signal).

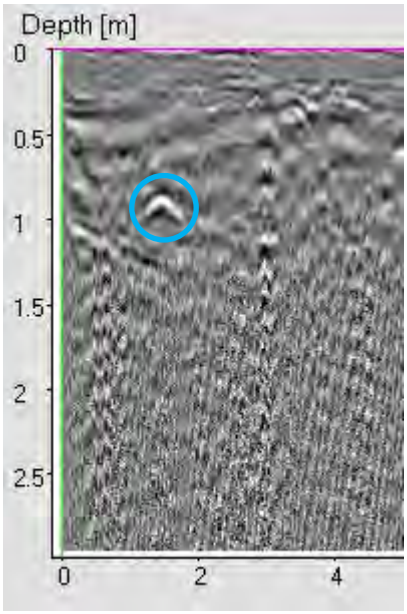


Figure 4: Example radargram (utility service)

4. RESULTS

The table below provides a summary of identified features detected on the Site. This table should be read in conjunction with Zetica Drawing P7380-17-DWG01-A (Summary Interpretation Plan). Reference should also be made to drawings P7380-17-DWG02-A (Map of Residual Magnetic Field Strength - Bottom Sensor (magnetics)), P7380-17-DWG03-A (Map of 3D Analytic Signal Amplitude - Bottom Sensor (magnetics)) and P7380-17-DWG04-A (Map of Secondary Decay Voltage (TDEM)).

Buried Features

Feature	No.	Estimated Depth Range (m)	Comments
Disturbed ground	1	-	An approximately 10m x 14m area of disturbed ground has been identified within the Site. The area corresponds to the anticipated location of the UST. There is no evidence of a UST being present in this area.
Water pipe	1	1.80-2.40m	
Linear GPR feature	6	0.20-0.85m	These features are interpreted as utility services.
Reinforced concrete	1	0.04-0.10m	A reinforced concrete footpath was identified running through the Site.

5. SUMMARY	
Summary	The GroundCheck® survey has identified an area of disturbed ground across the anticipated location of the UST. There is no evidence of a UST being present in this area. The survey has also identified a number of utility services and a section of reinforced concrete. The survey results are summarised on Zetica Drawing P7380-17-DWG01-A (Summary Interpretation Plan).

Appendix 1: General Notes

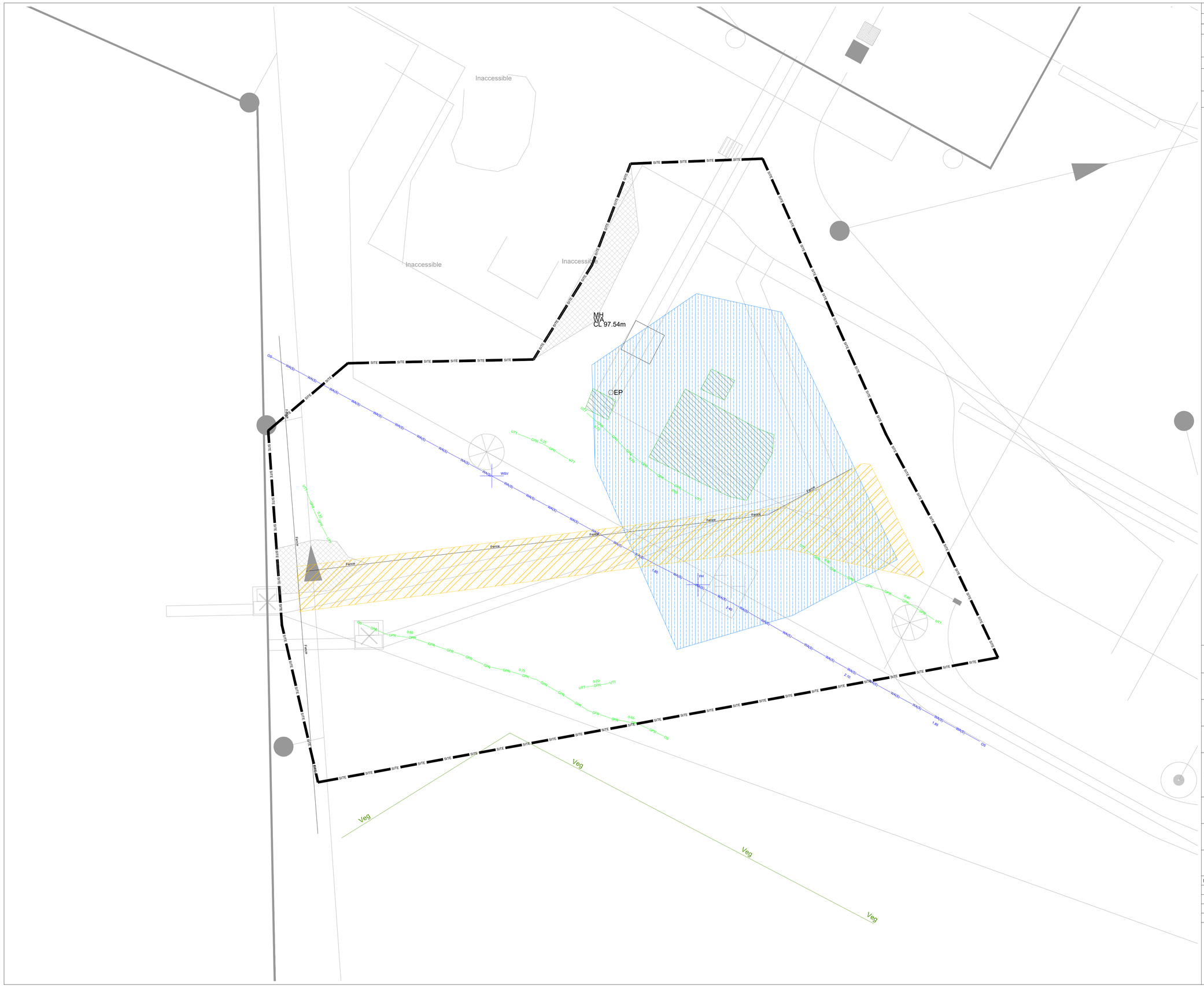
1. This report has been prepared in relation to the specific requirement of the contract or commission. The report should not be used by third parties without prior consultation with Zetica Ltd. Any advice, recommendations, or statements within the report should be addressed only in the context of the report as a whole.
2. The copyright for this report remains with Zetica Ltd. No part of this report may be reproduced, published or amended without prior written consent from Zetica Ltd.
3. The report refers to the conditions of the Property at the time of investigation. Zetica Ltd cannot accept liability for subsequent changes of Property conditions.
4. Zetica Ltd may have relied on externally provided information. Under no circumstances does Zetica Ltd accept responsibility for the accuracy of such information or data supplied.
5. By their nature, exploratory points, such as boreholes or trial pits, can only provide information on a relatively limited area or volume of a Property. In general, the conditions encountered may vary between exploratory points.
6. It should be noted that the detection performance is dependent on a sufficient physical (e.g. Magnetic) contrast between the item for detection and host materials. Where significant noise is present (e.g. an abundance of other Magnetic features in the host material), sufficient detection may not be possible.
7. Interpretation relies largely on experience of similar conditions. Site-specific conditions can create variations that may not be detectable by non-intrusive investigation techniques. It should be noted that the detail of an interpretation might vary from that identified by later intrusive investigation, although the general identification of a feature should not vary.
8. The report has been written in line with relevant guidance and legislation in use at the time of report compilation Subsequent improvement in techniques, changes in legislation, or changes in Site conditions, may render parts of this report obsolete. If the report is used after such changes have occurred, or at a time in excess of 1 year of the issue date, it would be prudent to contact Zetica Ltd to reassess the report under a new contract.

Established for over 26 **years, Zetica's services include**

- Desk studies
- Unexploded ordnance risk assessments and risk mitigation
- Topographic surveys
- Utility services detection
- Archaeological Geophysics
- Environmental and engineering geophysical surveys
- Transport infrastructure surveys
- Pipeline & cable route surveys
- Intrusive ground investigations

More details are available at

www.zetica.com



Notes

A	Base map constructed from Client provided drawing.
B	This drawing to be read in conjunction with Zetica report P7830-17-R1-A.
C	Limitations imposed by site conditions and current technologies mean that there can be no guarantee of detection for utility services. It is the responsibility of the user to satisfy themselves as to the location of site services prior to undertaking any excavation.
D	Zetica do not accept responsibility for the accuracy of information supplied by third parties.
E	Where they could be obtained, the depths for apparatus that were traced by RFL and GPR are identified alongside the apparatus in metres below ground level. The depths obtained are modelled and do not necessarily indicate the exact depth to a duct or pipe.
F	Factors such as multiple utility services and made ground can reduce the detectability of utilities and features.

Legend

- SITE — Site Boundary
- WA — Water pipe
- FEM — Below ground non-ferrous or non-metallic utility services
- GPR — Linear feature detected by GPR
- Disturbed ground
- Un-reinforced concrete
- Reinforced concrete
- Inaccessible

WSV	Water service valve
FH	Fire hydrant
UTT	Unable to trace
OS	Off-site
MH	Manhole
CL	Cover level

Draft

User to check for latest issue

Client
WSP

Project
Banbury GroundCheck® Survey

Location
KRAFT Site, Ruscote Avenue, Banbury

Title
Summary Interpretation Plan

Drawn by	Checked by
D Byrne	R Grant

Horizontal Scale (A1)	Date of Survey	Issue Date
1:75	08/01/2018	12/01/2018

Project Code	Drawing No.	Sheet	Issue
P7380-17	DWG01	1 of 1	A

Issue	Remarks	Drawn	Checked	Date
A	Draft issue, for comment.	DB	RG	12/01/2018

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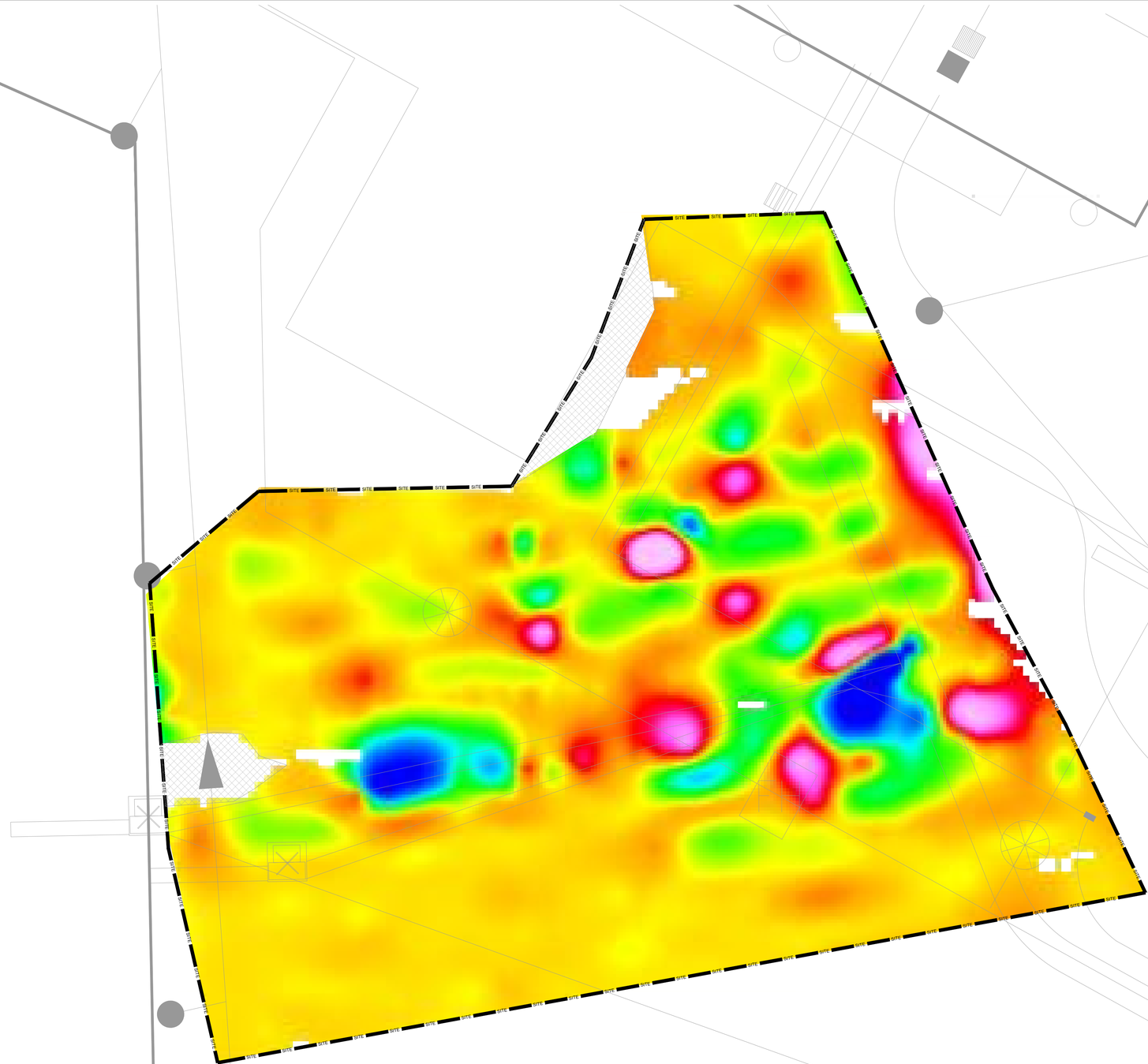

Notes	
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Legend

SITE Site Boundary

Draft

User to check for latest issue

Client
WSP

Project
Banbury GroundCheck® Survey

Location
KRAFT Site, Ruscote Avenue, Banbury

Title
Map of Residual Magnetic Field (Bottom)

Drawn by	Checked by
D Byrne	R Grant

Horizontal Scale (A1)	Date of Survey	Issue Date
1:75	08/01/2018	12/001/2018

Project Code	Drawing No.	Sheet	Issue
P7380-17	DWG02	1 of 1	A

Issue	Remarks	Drawn	Checked	Date
A	Draft issue, for comment.	DB	RG	12/001/2018

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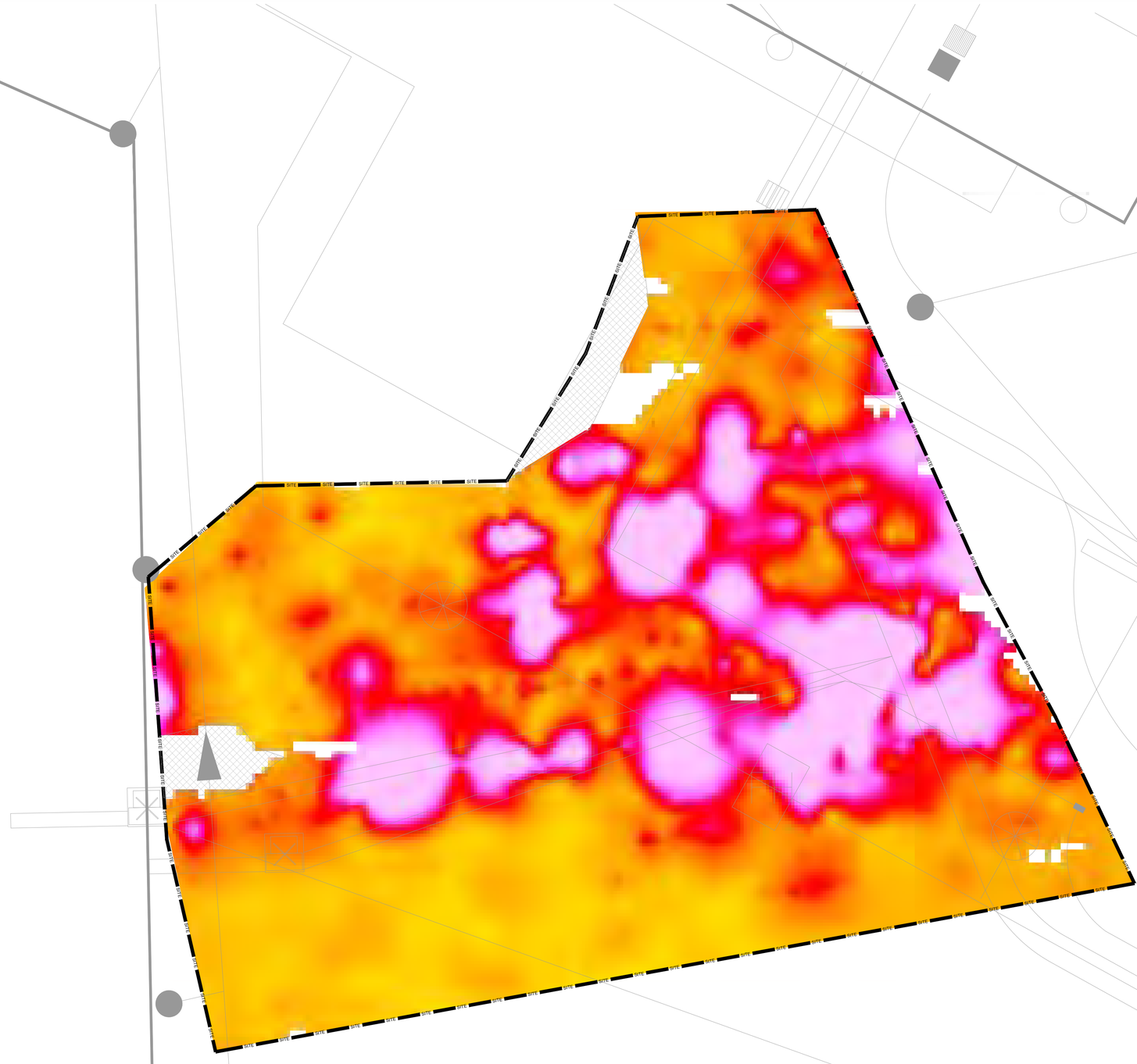

Notes	
A	Base map constructed from Client-provided drawing.
B	This drawing to be read in conjunction with Zetica report P7830-17-R1-A.
C	Limitations imposed by site conditions and current technologies mean that there can be no guarantee of detection for utility services. It is the responsibility of the user to satisfy themselves as to the location of site services prior to undertaking any excavation.
D	Zetica do not accept responsibility for the accuracy of information supplied by third parties.
E	Where they could be obtained, the depths for apparatus that were traced by RFL and GPR are identified alongside the apparatus in metres below ground level. The depths obtained are modelled and do not necessarily indicate the exact depth to a duct or pipe.
F	Factors such as multiple utility services and made ground can reduce the detectability of utilities and features.

Legend

SITE Site Boundary

Draft

User to check for latest issue

Client
WSP

Project
Banbury GroundCheck® Survey

Location
KRAFT Site, Ruscote Avenue, Banbury

Title
Map of 3D Analytic Signal (Bottom)

Drawn by	Checked by
D Byrne	R Grant

Horizontal Scale (A1)	Date of Survey	Issue Date
1:75	08/01/2018	12/001/2018

Project Code	Drawing No.	Sheet	Issue
P7380-17	DWG03	1 of 1	A

Issue	Remarks	Drawn	Checked	Date
A	Draft issue, for comment.	DB	RG	12/001/2018

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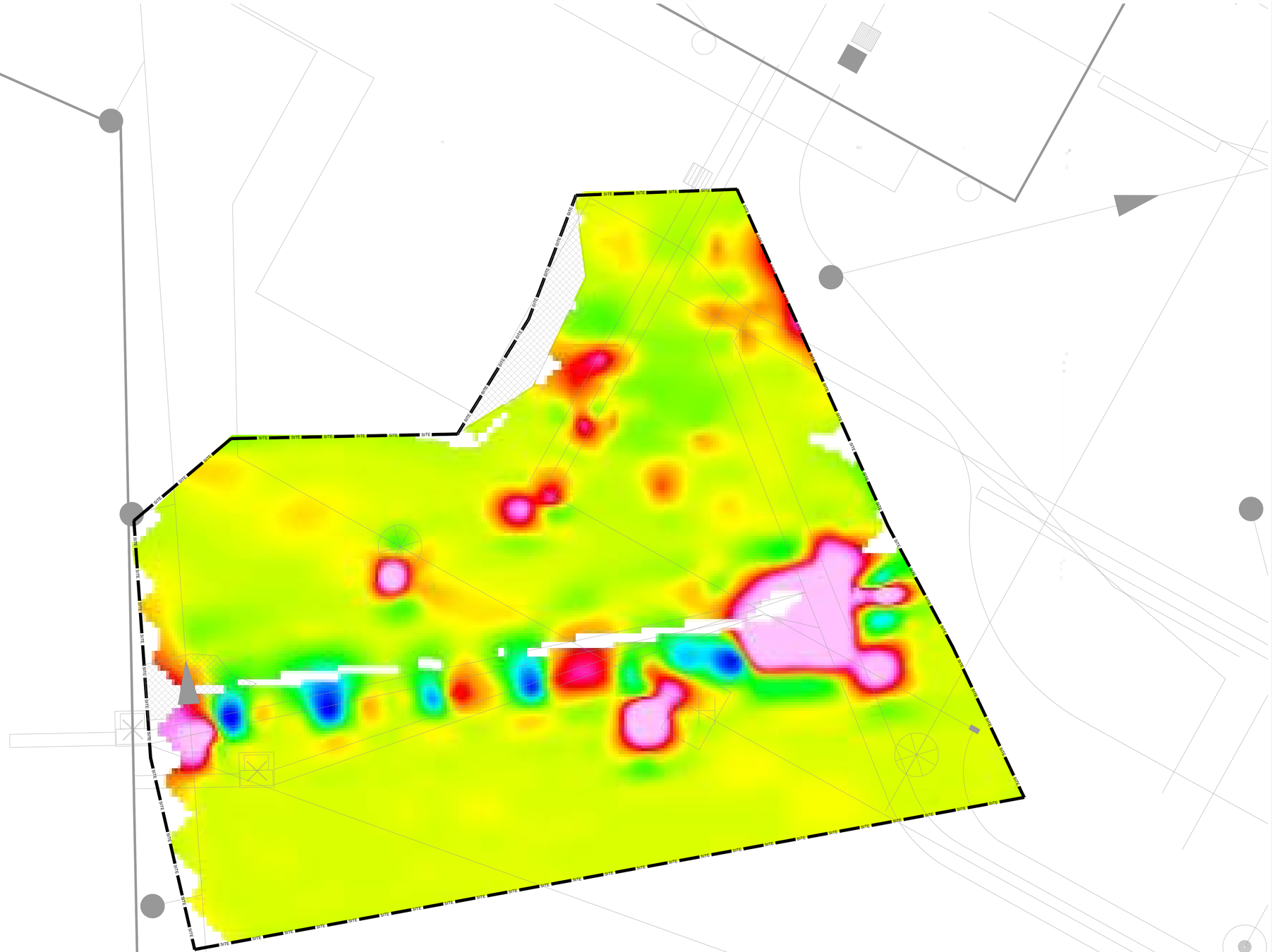

Notes

A	Base map constructed from Client-provided drawing.
B	This drawing to be read in conjunction with Zetica report P7830-17-R1-A.
C	Limitations imposed by site conditions and current technologies mean that there can be no guarantee of detection for utility services. It is the responsibility of the user to satisfy themselves as to the location of site services prior to undertaking any excavation.
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E	Where they could be obtained, the depths for apparatus that were traced by RFL and GPR are identified alongside the apparatus in metres below ground level. The depths obtained are modelled and do not necessarily indicate the exact depth to a duct or pipe.
F	Factors such as multiple utility services and made ground can reduce the detectability of utilities and features.

Legend

SITE Site Boundary

Draft

User to check for latest issue

Client

WSP

Project

Banbury GroundCheck® Survey

Location

KRAFT Site, Ruscote Avenue, Banbury

Title

Map of Secondary Decay Voltage

Drawn by	Checked by
D Byrne	R Grant

Horizontal Scale (A1)	Date of Survey	Issue Date
1:75	08/01/2018	12/001/2018

Project Code	Drawing No.	Sheet	Issue
P7380-17	DWG04	1 of 1	A

Issue	Remarks	Drawn	Checked	Date
A	Draft issue, for comment.	DB	RG	12/001/2018

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dsm
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decommission / demolish / decontaminate

Post Contract Information File

Contents

Post Contract Information File

0.0 Document Status

0.1 Document Authorisation:

	Author	Approved
Name	Victoria McMahon	Robert Cooke
Position	Asst. Project Co Ordinator	Quality & Environmental Manager
Signature		

Note: Electronic versions of this document do not contain signatures

0.2 Document History:

Review Date	Version No.	Section	Comment / Amendments	Initials
04 Feb 2019	1		Initial Issue	VMc

1.0 Document Outline

This document contains the contract information relating to the works undertaken on site. It is divided into sections, detailed below, that group together the available information into sections for use by interested parties as required.

- Section Two - Health and Safety File Information
- Section Three – Waste Summary Details
- Section Four – Copies of waste and material transportation notes and tickets
- Section Five – Legal Notifications for DSM's Works
- Section Six – Site Environmental Monitoring

2.0 Health and Safety File Information

This section contains the information relating to the future use of the site. The information includes that required by the principle designer when preparing the Health and Safety File for the site overall.

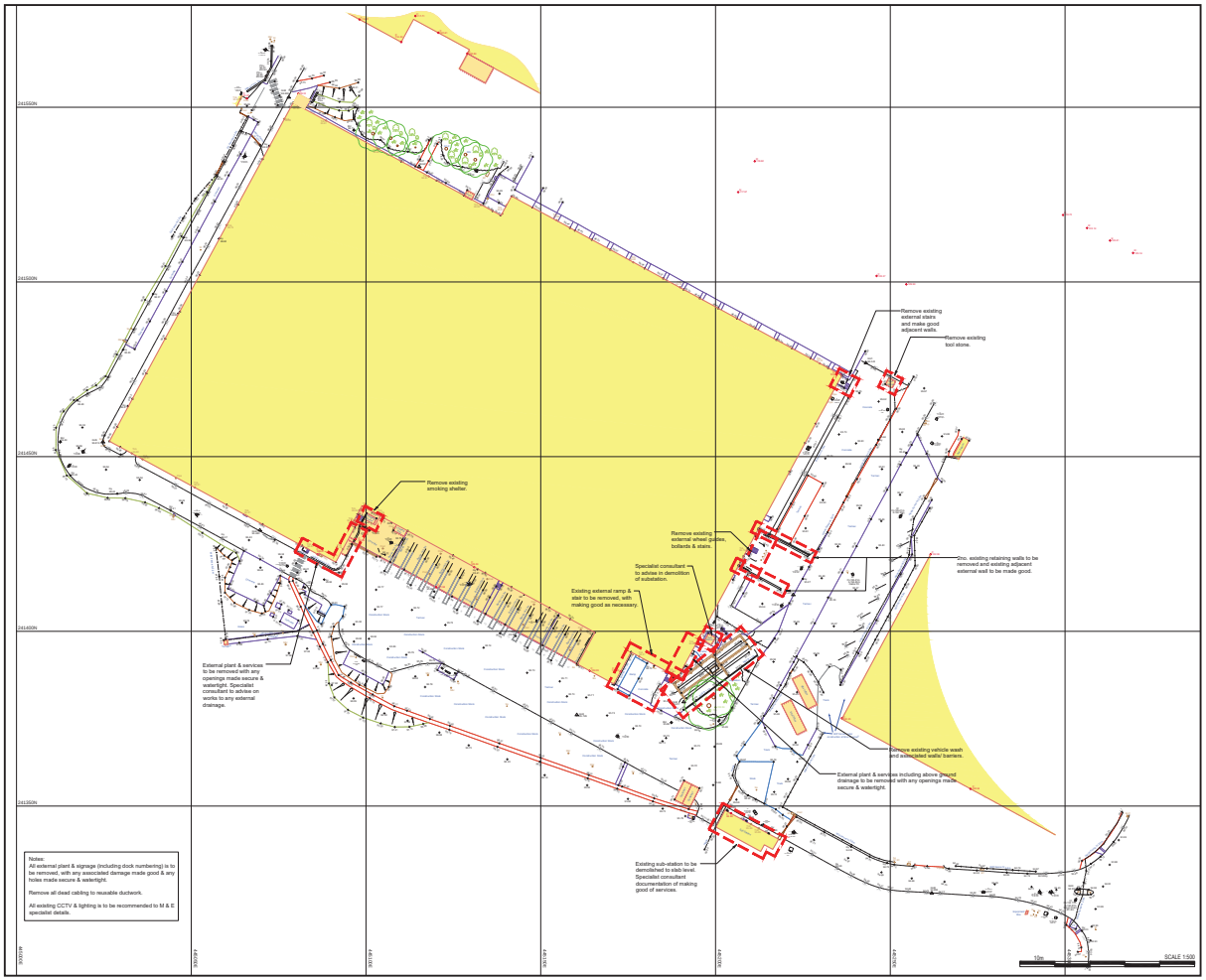
2.1 Outline Description of The Works Undertaken

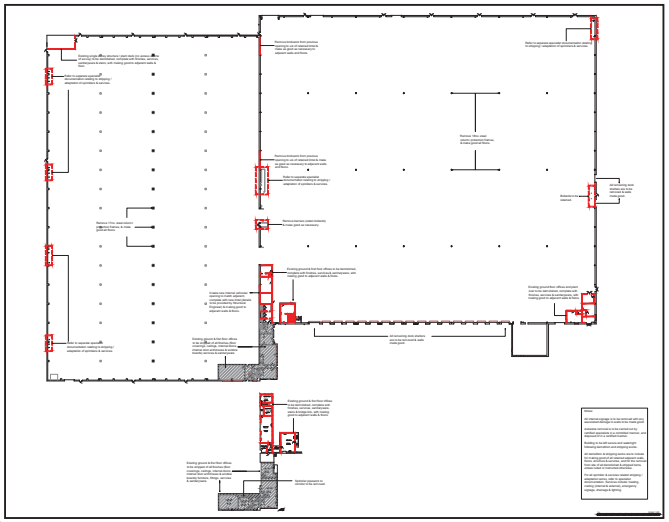
The project works undertaken at the Banbury 200 unit included the internal strip of two warehouse units, identified offices and M&E fittings. The internal rain water items were retained. The identified buildings were cleared of all soft strip, ancillary items and asbestos containing materials.

The substation was demolished, and the floor slab and foundations removed up to one meter below ground level.

All waste was removed from site to waste facilities holding a suitable permit.

The following drawing illustrates the scope of works.





SITE LOCATION

Address: JDE Building, Ruscote Avenue, Banbury
Access off Southam Road

Postcode: OX16 2NN

GENERAL INFORMATION

Client: Astec TM

Principal Contractor: ☑ DSM ☐ others

Welfare facilities by: ☑ DSM ☐ others

Demo works Fencing by: ☑ DSM ☐ others

Fencing specification: ☑ heras ☐ hoarding ☐ palisade ☐ other (below)

ASBESTOS

	YES	NO
NON-NOTIFIABLE present	☑	☐
NOTIFIABLE present	☑	☐

Read asbestos survey in site pack prior to commencing site works. Do not commence demolition until clearance certification is received

Asbestos removal by: ☑ DSM ☐ others

SERVICES

Disconnections by: ☐ DSM ☑ others

Status of services disconnections can be found in 'section 6' of the site pack

IF YOU DO NOT HAVE WRITTEN CONFIRMATION THAT IT IS DISCONNECTED THEN CONSIDER IT TO BE LIVE!!

Any known live or retained services within working area will be shown on the plan
Any known drainage / sewers to be retained or protected will be shown on the plan

DEMOLITION SPECIFICATION

Floorslabs
Foundations
Arisings
Hardstandings

Demolition
Substation and breakout slabs up to 1m, remove internal offices, roller shutters, dock leveller, column protection, lorry wash, M&E, CAT ladder,signage, retaining walls, vehicle wash & protection frames.

FINISHES

Fencing after demo: ☐ heras ☐ hoarding ☐ palisade ☐ other (below)

- fencing notes: N/A

Ground after demo: ☑ levelled ☐ seeded ☐ turfed ☐ other (below)

-finishing notes:

Additional comments: Rainwater goods to remain in situ throughout. Building to be left secure throughout programme (external doors etc).

Signed

rev.	revision notes	date	by
A	Site Issue Drawing	16 08 18	AB

Drwg No:	C11281
rev	A
Project	JDE Building, Banbury
Title	Scope of Works

date	16/08/18
scale	n/a @A3
drawn	Andrew Brain
checked	Tony McGovern

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Arden Road
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Email: mail@dsmgroup.info

dsm
www.dsmgroup.info
decommission / demolish / decontaminate

2.2 Contract Dates

20th August 2018 – 2nd November 2018

2.3 Contract Directory

The following individuals and organisations were involved with the works DSM undertook on site.

Client

Astec TM ltd	Contact – Stephen Broadhurst
Brookfield Farm	Tel – 07968 556576
Nuneaton	
Church End	
Ansley	
CV10 0QU	

Principle Designer

Curran Web Ltd	Contact – Jim Curran
Vale Park	Tel – 01386 765189
Enterprise Way	
Evesham	
WR11 1GS	

Contractor

DSM Demolition Limited	Contact – Billy Young
Arden House	Tel – 0121 322 2225
Arden Road	
Heartlands	
Birmingham	
B8 1DE	

2.4 Services

All installations on site were disconnected prior to works commencing by the client.

- Electrical isolation certificate attached.

Isolation Permit / Report				
Company DSM Group				
Site JDE building			Date 20/08/2018	
Location and details of Work Site audit to check electrical services already isolated and are proved dead at utilities incoming and outgoing to enable demolition works. Note; all complete and confirmed dead.				
Method Statement Reference(s) n/a				
Risk Assessments Reference(s)n/a				
Persons carrying out the work must be in possession of relevant Method Statements and / or Risk Assessments. These must have been reviewed and approved by Dualec LTD				
Equipment affected by the withdrawal: all electrical services.				
I hereby authorise the withdrawal of service of the equipment described above				
Name Keiron Jones	Signature	Company DSM group		
Electrical Services to be Isolated				
Service main incomes	Location	Means removed		
Service	Location	Means		
Service	Location	Means		
Authority to commence work				
I have inspected the system and equipment identified in section1 of this permit and am satisfied that it is sufficiently isolated for the work described to proceed until: Time Date				
	Name	Signature	Time	Date
Responsible Person (Elec)	Steven day	S.d	8.30am	20/08/2018
Authorised Person				
6. Withdrawal of Permit				
I have inspected the system and equipment and am satisfied that the work is completed or suspended and it is safe to remove the Isolations.				
	Name	Signature	Time	Date
Responsible Person (Elec)	N/a service made redundant			
Authorised Person				

2.5 Other Known Residual Hazards

This section contains the details any site residual hazards known to DSM, and details of any hazardous materials used by DSM in the course of the works that remain on site. Details of the residual hazards posed by services on site are contained in section 2.4.

No other known residual hazards remain on site.

2.6 Details of Plant and Equipment Left on Site

This section contains the details, operating instructions, maintenance details etc of any equipment installed as part of DSM's works that remains on site.

No plant or equipment was left on site as part of DSM's works.

2.7 Test Results for Materials Left on Site

This section contains the test results for any materials remaining on to site. This includes materials such as site produced 6F2, 6F3, Type One Sub-Base etc.

No materials were left on site.

3.0 Waste Summary Details

Details of all the wastes produced on site and the disposal and treatment routes are contained within this section. For the contract the amount of material recycled, recovered and re-used by weight is calculated [Demolition Index DI] and where appropriate the amount of recycled, recovered and re-used material retained for future site use is calculated [Retained Material Index RMI].

3.1 Summary of Wastes

This section summarises all the wastes produced by the works including waste types; waste carriers used, waste facilities used and details of waste quantities and loads moved.

Site Waste Management Plan - Summary of Produced Waste

Contract Name	JDE Building, Banbury, OX16 2NN
Contract Number	C11281

Phase Number	Not Applicable	Date of Issue	04 Feb 2019	Version Number	1
Reason For Issue	Final				

Overall Achieved Recycling Rates

Parameter	Target	Actual
DI - Demolition Index	98	95
RMI - Retained Material Index	n/a	n/a

Summary of Wastes

(Amounts to the nearest whole tonne)

Waste / Material Type	EWC Code / Material	Operation	Facility Code Number	Carrier Code Number	Loads	Arisings (Tonnes)			
						Forecast		Actual	
						Total	RRR'd	Total	RRR'd
Concrete & Brick	**17 01 07**					**500**	**500**	**468**	**468**
		R O	158	2	26			468	468
Asbestos Insul.	**17 06 01**					**10**	**0**	**9**	**0**
		W	86	2	2			9	0
Soft Strip	**17 09 04**					**40**	**34**	**34**	**11**
		R O	123	2	2			8	7
		R O	83	2	1			5	4
		W	86	2	6			21	0
Iron & Steel	**17 04 05**					**180**	**180**	**170**	**170**
		R O	44	23	28			170	170
Operation Codes				Total	65	730	714	681	649

R S RRR'd On Site **W** Waste (Landfill) **R O** RRR'd Off Site **R O-F** RRR'd Off Site (as fuel)

Notes

DSM produces waste management plans as part of the process of developing working methods for its contracts. This ensures that the amount and composition of all arisings are taken into account when the works are designed. This ensures that the maximum amount of arisings are diverted from waste and into products that can be re-used.

There is now no legal requirement to produce waste management plans, but DSM still produces them as they ensure the maximum amount of arisings produced are re-used, recycled or recovered. All wastes produced on any contract are reviewed to determine the best disposal route and in all decisions the waste hierarchy is applied.

DSM, as part of its management system, sets a KPI [key performance indicator] for the amount of waste that is re-used, recycled or recovered [RRRR'd]. The nature of our core works produces large quantities of waste due to the legal definition of waste being "materials no longer required or needed by the holder or producer". The KPI use the demolition index [DI] which is defined as the percentage of waste produced that is re-used, recycled or recovered compared to the total amount of waste produced.

DSM also measures the retained material index [RMI] which is defined as the percentage of recovered waste that is left on the production site for future use. DSM does not set a KPI for this index as it is one we have no control over.

All of the planned or used waste carriers have been identified and their registration numbers identified and verified.

All of the planned or used waste facilities, operators and their permits or exemption from the need for a permit (under the Environmental Permitting (England and Wales) Regulations 2007 etc) have been verified as being valid.

As required by section 34 of the Environmental Protection Act 1990 copies of, or references to the written description of all the wastes have been obtained.

We have identified the waste management action proposed for each different waste type, including re-using, recycling, recovery and disposal, and have ensured that all waste from the site is dealt with in accordance with the waste duty of care in section 34 of the Environmental Protection Act 1990(3) and the Environmental Protection (Duty of Care) Regulations 1991(4); and materials will be handled efficiently and waste managed appropriately in accordance with the waste hierarchy as listed below:

Operation	Code	Comments
Reduce / Prevention	~	*Not applicable to DSM's core works - client decision*
Re-Use	R S R O	*Optimal solution where possible eg re-use roof slates*
Re-Cycle	R S R O	*By mass DSM's principal waste operation (concrete and brick into secondary aggregates)*
Recover	R O-F	*Typical operation is use of poor quality wood as a fuel*
Dispose	W	*Limted to disposal of materials normally with specific properties such as asbestos*

Site Waste Management Plan - Waste Carriers and Disposal Facilities

Contract Name	JDE Building, Banbury, OX16 2NN				
Contract Number	C11281				
Phase Number	Not Applicable	Date of Issue	04 Feb 2019	Version Number	1
Reason For Issue	Final				

Registered Waste Carriers

Code Number	Full Name	Postcode	Registration
23	European Metal Recycling Ltd	WA5 7NS	CB/ZE5607KJ
2	DSM Demolition Ltd	B8 1DE	CBDU101140

Disposal Facility

Code Number	Full Name	Postcode	Permit	Recycle Rate (%)
158	DSM Demolition, Fenny Compton	CV47 2XB	n/a	100
123	Mercian Recycling Ltd	B30 3JJ	100336	85
86	Veolia Ling Hall	CV23 9HH	48116	0
83	Tom White Waste Ltd Coventry	CV6 6AP	101653	85
44	EMR Swindon	SN2 8DZ	86340	100

3.2 Waste Tickets

This section contains copies of all waste duty of care notes and hazardous waste consignment notes for materials taken from site.

DUTY OF CARE NOTE 55702

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GARY HURST

VEHICLE REG.: BK62 BYT

DATE: 18/09/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 6

JOB NAME: BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
	✓										
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

DESCRIPTION: CONCRETE

DECLARATION – Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

CONSIGNEE (RECEIVED BY)

COMPANY NAME: DSM

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE 55571

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GAVIN

VEHICLE REG.: BU62 BYU

DATE: 19/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 1x8w

JOB NAME: JOE BANBURY

TAKEN TO: TOM WHITES COVENTRY

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
			✓								
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

DESCRIPTION: DEMO WASTE 17.09.04

DECLARATION – Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE 55572

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GAVIN

VEHICLE REG.: BH62 BYU

DATE: 19/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 1 x 8w

JOB NAME: JDE BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
	/										
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

DESCRIPTION: CONC

DECLARATION – Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE 55574

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GAVIN

VEHICLE REG.: BU62 BYU

DATE: 20/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 1x8W

JOB NAME: JDE BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box											
	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

DESCRIPTION: HARDCORE

DECLARATION – Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE 55575

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GAVIN

VEHICLE REG.: BL62 BYU

DATE: 20/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 1x8w

JOB NAME: JDE BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box		CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
EWC 17		01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	
SIC CODE	43.11											
DESCRIPTION	CONC											

DECLARATION – Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE 55576

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GAVIN

VEHICLE REG.: BK62 BYH

DATE: 20/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 1 x 8w

JOB NAME: JOE BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
	✓										
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

DESCRIPTION: CONC

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CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE 55577

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GAVIN

VEHICLE REG.: BH62 BYH

DATE: 20/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 1x8w

JOB NAME: JDE BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
	✓										
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

DESCRIPTION: CONC

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CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE 55578

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GRAVIN

VEHICLE REG.: BK62 BYU

DATE: 20/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 1 x 8YD

JOB NAME: JDE BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

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CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE 55579

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GAVIN

VEHICLE REG.: BK62 BYU

DATE: 20/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 1x8w

JOB NAME: JDE BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
	✓										
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

DESCRIPTION: CONC

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CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE

54736

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GAVIN

VEHICLE REG.: BL62 BYU

DATE: 24/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 1 x 8w

JOB NAME: JOE BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	
SIC CODE	43.11										
DESCRIPTION	CONC										

DECLARATION – Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE 54737

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GAVIN

VEHICLE REG.: BL62 BYU

DATE: 24/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS:

JOB NAME: JDE BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
	✓										
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

DESCRIPTION: CONC

DECLARATION – Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

CONSIGNEE (RECEIVED BY)

COMPANY NAME:

LOCATION:

NAME (print):

SIGNATURE:

DUTY OF CARE NOTE 54738

dsm

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: GRAHAM

VEHICLE REG.: BIG62 BYH

DATE: 24/9/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: 1 x 8w

JOB NAME: JDE BANBURY

TAKEN TO: FENNY COMPTON

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

DESCRIPTION: CONC

DECLARATION – Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE

DUTY OF CARE NOTE 54901

CARRIER DSM Demolition Ltd., Arden House, Arden Road, Heartlands, Birmingham B8 1DE
TELEPHONE 0121 322 2225 **FAX** 0121 322 2227 Carrier/Broker Licence No. – CBDU101140

CARRIER DETAILS

DRIVER'S NAME: Paul

VEHICLE REG.: DX68 VCC

DATE: 25/10/18

SITE DETAILS

JOB NUMBER: C

No. OF LOADS: one

JOB NAME: Banbury Site

TAKEN TO: Fenny Compton Site

MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)

MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL – CLEAN	SOIL – CONTAM.	OTHER – DETAIL
	X										
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	

SIC CODE: **43.11**

DESCRIPTION: Concrete

DECLARATION – Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

CONSIGNEE (RECEIVED BY)

COMPANY NAME

LOCATION

NAME (print)

SIGNATURE